OCT.
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1960

PETROLEUM WEEK

A McGRAW-HILL PUBLICATION

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UNIV MICROFILMS INC
EDITORIAL DEPT
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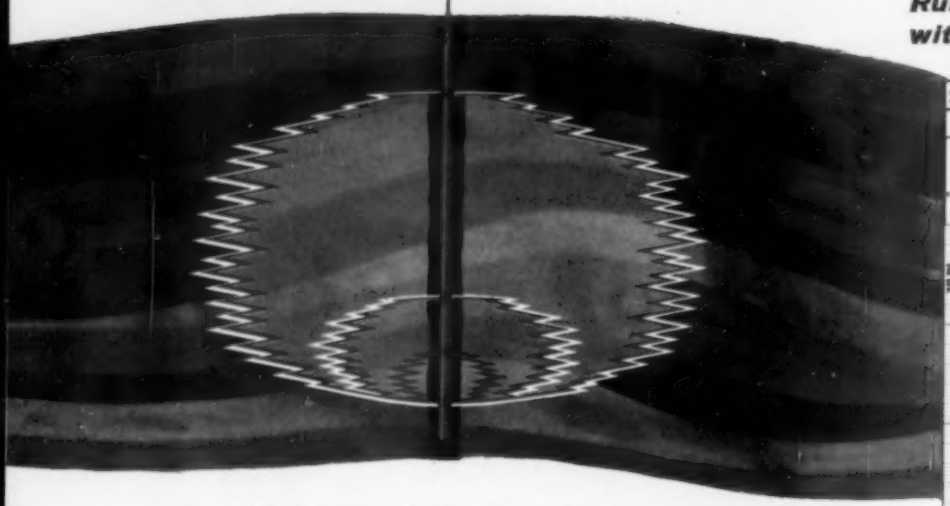
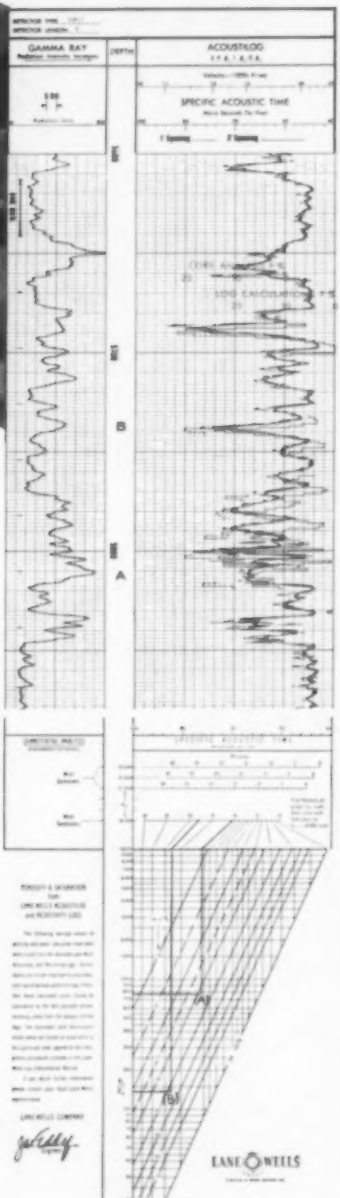
Another FIRST by LANE-WELLS

DUAL SPACED ACOUSTILOG*

Run SIMULTANEOUSLY with Gamma Ray or SP





Lane-Wells Dual Spaced Acoustilog is the most accurate, most meaningful, most informative, quickest run log of this type available anywhere. All new instruments, offered exclusively by Lane-Wells, make it possible to run both 1′ and 3′ spacing curves plus either a self potential or a gamma ray curve all on one trip into the well.

Provides Most Meaningful, Most Accurate FORMATION EVALUATION

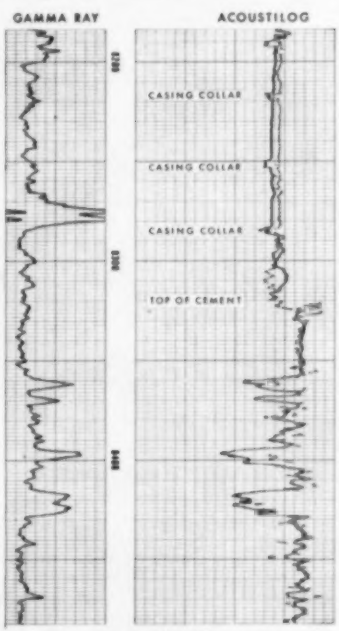
MOST MEANINGFUL!—Because both the 1′ and 3′ curves are recorded while the instrument is in the same position in the borehole, the differences in readings are significant and reliable. Porosities may be read accurately directly from the log. **MOST ACCURATE!** — Exclusive design and circuitry features of Lane-Wells Dual Spaced Acoustilog enable it to measure sound velocities within ±2% of known formation velocities.

PLUS—CEMENT LOCATION

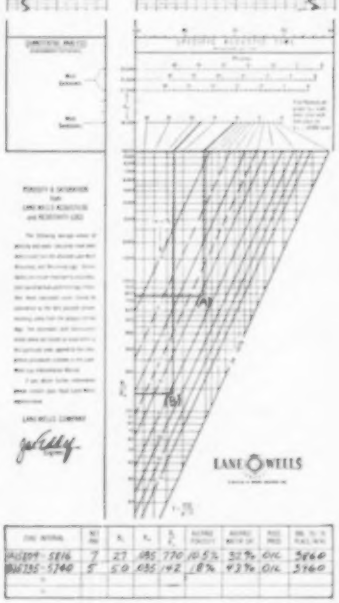
Dual Spaced ACOUSTILOGS have proved remarkably valuable in locating cement and channeling behind casing. Even in areas where other cement locating equipment fails, Acoustilog gets the information.

For complete information about how the all new Dual Spaced Acoustilog can save you money and give you more information about your well, call your nearest Lane-Wells office or write P. O. Box 1407, Houston 1, Texas.

*Lane-Wells Service Mark



Acoustilog used to locate cement.



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LOGGING · PERFORATING · PACKERS · BRIDGING PLUGS

DRESSER INDUSTRIES, INC.
OIL · GAS · CHEMICAL · ELECTRONIC · INDUSTRIAL

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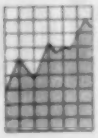
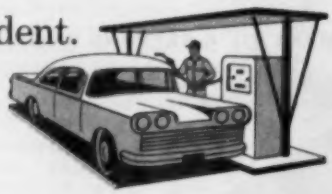
You're AHEAD with Lane-Wells' Superior Service

For years oil companies had only one way to check on gasoline sales trends fast. That was through

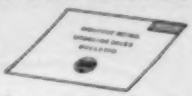


Ethyl's monthly report of total industry sales by states. The industry found

this a good service, but the need for additional information on retail sales became evident.



So today, with the help of the oil companies, Ethyl sends out monthly reports



giving service station gasoline sales by grades in 117 metropolitan areas. "GOOD" just wasn't good enough.

WHERE "GOOD" IS NOT GOOD ENOUGH

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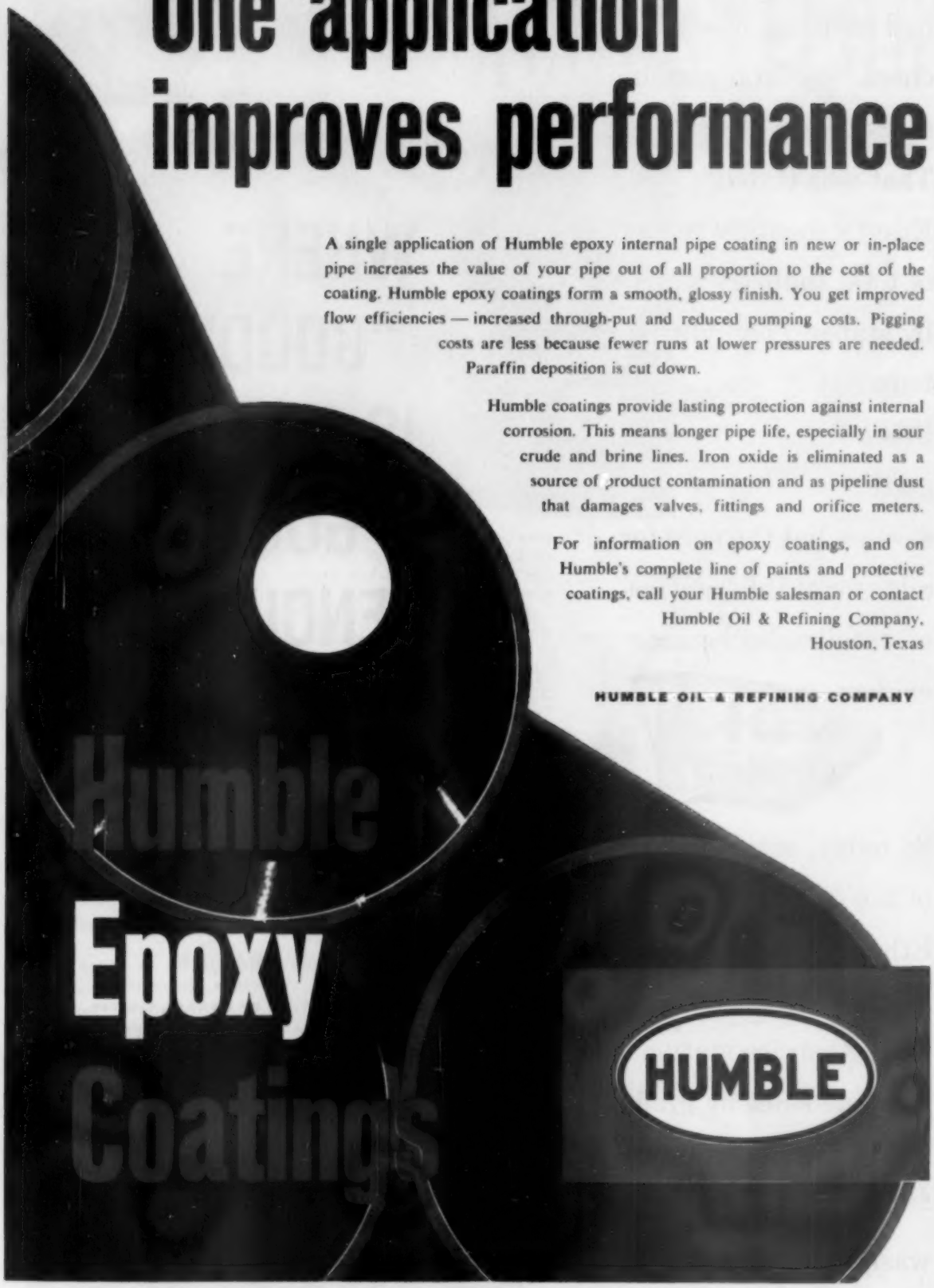
One application improves performance

A single application of Humble epoxy internal pipe coating in new or in-place pipe increases the value of your pipe out of all proportion to the cost of the coating. Humble epoxy coatings form a smooth, glossy finish. You get improved flow efficiencies — increased through-put and reduced pumping costs. Pigging costs are less because fewer runs at lower pressures are needed. Paraffin deposition is cut down.

Humble coatings provide lasting protection against internal corrosion. This means longer pipe life, especially in sour crude and brine lines. Iron oxide is eliminated as a source of product contamination and as pipeline dust that damages valves, fittings and orifice meters.

For information on epoxy coatings, and on Humble's complete line of paints and protective coatings, call your Humble salesman or contact Humble Oil & Refining Company, Houston, Texas

HUMBLE OIL & REFINING COMPANY



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INSIDE *Slant*

A JUST REQUEST

The recent request of the American Assn. of Oilwell Drilling Contractors that imports be reduced in 1961 carried some interesting information with it.

AAODC asked that imports be reduced to a level that would permit domestic production to regain the share of the U.S. market lost since 1956. At the same time, it asked that domestic production hereafter be allowed to furnish the major portion of the increases in U.S. demand for crude and products.

Most interesting of the AAODC information was the fact that U.S. oil production during the first eight months of 1960 averaged 141,000 b/d less than in 1956. During the same period, imports of crude and products rose 392,000 b/d.

This decline in U.S. production has taken place in the face of an increase of 624,000 b/d in demand this year over 1956.

And this situation is continuing despite import controls: In the first eight months of 1960, AAODC pointed out, crude imports were 60,000 b/d above the year-ago period, while domestic production was 77,000 b/d lower.

LeRoy Menzing
EDITOR

DOW

serving
PETROLEUM
across
the board

Many Dow chemicals and services work daily for the petroleum industry in countless ways. For example, Dow's Petroleum and Gas Conditioning Laboratories cover a broad spectrum of petroleum problems and needs—from sample analyses of in-use processing chemicals to development of new methods of trouble-shooting and trouble prevention . . . in the lab and in the field. Here's a typical story of how Dow's chemical "detectives" solved a costly case of corrosion for one customer with gas processing problems.

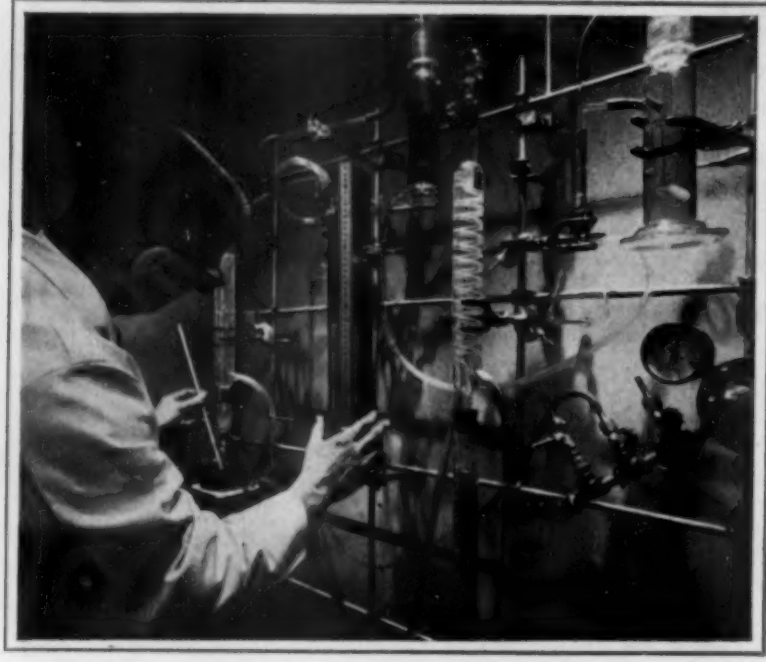
NEW INHIBITOR K.O.'S CORROSION IN GAS PROCESSING EQUIPMENT

The long-standing problem of corrosion of gas processing equipment by MEA (monoethanolamine) solutions has taken a body blow. Though the acidic compounds which gradually appear in these MEA solutions have not been completely identified, their corrosive effects on metal can be virtually eliminated by the use of a new corrosion inhibitor—sodium vanadate.

Michigan Seamless Tube Company of South Lyon, Michigan, parent corporation of Gulf States Tube Corp., has kept equipment and piping free from corrosion for over two years, thanks to the new Dow development.

In this system, natural gas is burned, producing carbon dioxide and nitrogen. In an absorber, the carbon dioxide is removed by a circulating MEA solution. This CO_2-rich MEA recirculates through a reboiler which strips it of the absorbed gas. The MEA solution returns to the absorber for reuse. For three years after installation of the system, corrosion was a costly, serious problem. Piping had to be replaced almost monthly, particularly in the sections carrying MEA from the combustion chamber. The reboiler was also heavily corroded in MEA-contact areas.

In the Dow lab, metal particles are exposed to MEA solutions to prove the inhibiting effect of sodium vanadate.



Dow chemists proposed that Michigan Seamless try the addition of sodium vanadate to the MEA solution, basing their recommendation on the results of sodium vanadate's reaction with iron. The oxide film normally covering iron has cracks, through which ferrous ions pass into solution. But when sodium vanadate is present, the ferrous ions convert to ferric ions, which react to form an insoluble oxide, plugging the openings and preventing further reaction of the metal with the liquid.

This theory was tested, using pipe nipples and test sections of mild steel. They were put into both lean and rich MEA lines and left for a month. Weight loss and rate of penetration of the metal were found to be in the order of 13 grams, and over 93 mils/year, respectively, in both lines! But addition of small amounts of sodium vanadate cut corrosion and penetration to negligible levels. When applied in the Michigan Seamless system, the sodium vanadate additive virtually eliminated corrosion and metal replacement in even the most troublesome areas.

To maintain this protection, Dow chemists periodically analyze the inhibited MEA solution, keeping sodium vanadate content at the proper level.

This case is typical of the customer problems which pass through Dow's Gas Conditioning Laboratories day-in, day-out. And it's typical of the extensive analytic work which goes into their successful solutions. The services of this laboratory are available to industry for any kind of gas processing problem.

• ETHANOLAMINES

. . . absorbing chemicals

The use of Dow ethanolamines for the absorption of hydrogen sulfide and carbon dioxide from natural gas is an old story, partly because product uniformity and purity help produce the best results. But there's more to it than that. Dow chemists constantly work with gas processors to write new versions of the story . . . producing new answers, new techniques of use, and thorough problem analysis. And the knowledge gained will be the basis for solving problems yet to come.

Dow chemists trouble-shoot gas conditioning problems on the spot.

The Dow Gas Conditioning Laboratories maintain voluminous case history files of gas conditioning problems. This invaluable data is available to help solve any gas scrubbing problem, and it's in constant use successfully, as natural gas processors across the country can testify!

Production and refining, too . . .

DOWICIDE PRESERVATIVES

clear up the mud problem

Dowicide® preservatives are Dow's hard working bacteria and fungi fighters. They shield starch-containing drilling muds from microbe attack, preventing decomposition.

This protection is a simple, economical matter, particularly when the pH of drilling mud falls below 11.

There are other Dowicide preservatives for other specific problems, too. To protect flooding water and retain porosity of below ground strata, use Dowicide F or G. It's equally easy to keep processing water free of algae, fungi and other slimes which often cause trouble in circulating systems. In fact, for *any* process problem of this kind there's a Dowicide preservative to do the job needed.

DOW PHENOL

workhorse chemical

Phenol and phenol derivatives do yeoman duty in refining processes. Some of these compounds perform as gum inhibitors, some as tetraethyl lead stabilizers, and others are corrosion inhibitors in lube oils. Barium phenates function as detergents and as pour point depressants. Alone, or mixed with other solvents, phenol is also used to extract unwanted elements from lube oil stocks.

Dow's wide line of phenol and phenol derivatives can be had in a hurry. And you'll get not only fast delivery, but quality and uniformity of properties that mean results you can count on!

• GLYCOLS

pinpoint depressants

Dow glycols serve natural gas producers by acting as dew-point depressants for gas before it enters the transmission line. As processors know, the formation of gas hydrates can be a costly problem. Dow offers a wide line of polyols made from ethylene and propylene oxide.

Dow is basic in these chemical intermediates. That is, Dow manufactures virtually all of its own "starting point" chemicals. Consequently, the uniformity and purity of these basic chemicals can be kept extremely high. And this quality is reflected in the products used by the natural gas processor.

Dow's "basic" position as chemical producer is an advantage to the gas producer for several reasons, among which are: complete control of quality, starting with the raw materials; a wide line of conditioning chemicals; and widespread production facilities, which mean fast delivery in any part of the country.

DOWELL DIVISION is the largest service company of its kind. From general offices and laboratories in Tulsa, Dowell provides oil and gas well acidizing, formation fracturing, cementing services and chemicals. Their services and petroleum chemical products are available throughout the U.S., Canada, and in South America. For information, write Dowell, Tulsa 2, Oklahoma.

THERE ARE ADVANTAGES in consulting Dow, no matter what the chemical problem. From long experience, Dow chemists can quickly provide the answers you need. To learn more about how Dow can help you, write THE DOW CHEMICAL COMPANY, Midland, Mich., Chemicals Merchandising Dept. 502LR10-14

See "The Dow Hour of Great Mysteries" on TV.

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DOW

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The Wilson supply man who makes your rig or field location is an experienced supply and equipment man. He's there to be of service to you. He'll see to it . . . You get what you want . . . When you want it.

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Views That Make News

"There is a popular notion that creative ability is reserved for only a gifted few, and that the masses are doomed to follow the leader or 'simply muddle through.' Nothing could be farther from the truth. While the role of genius and the place of the brilliant scientist in the realm of creativity is readily conceded, there remains a vast area for creative action well within the capacities of most of us. The need for creative achievement in these areas is so great that everyone should be encouraged to develop and exercise his capabilities to this end if we are not to fail our destiny."

—C. R. HOCOTT
Manager, production research
Humble division
Humble Oil & Refining Co.

"A close study of all the great industries reveals that theirs is a story of change—of continually revamping their organizations, their tools, equipment, facilities, and their resources to fit the never-ending parade of progress. The [petroleum] industry must continue to look for new and better ways to do a job if we expect to keep pace."

—GEORGE J. GREGOR
Manager, southwest marketing division
Mobil Oil Co.

"The entire petrochemical industry sprang from the success of scientists in unlocking the vast potential stored inside the molecules of petroleum. . . . More than 3,000 different hydrocarbon compounds have been produced from oil and natural gas. So far, some 300 of them are commercially important. But scientists believe there are many more useful hydrocarbon derivatives still to be discovered. Out of this test-tube cornucopia will come a multitude of new products to meet the expanding needs of tomorrow."

—M. J. RATHBONE
President
Standard Oil Co. (N.J.)

"In the interest of your nation's stability and the soundness of yours and your children's dollars, shouldn't you make every effort to persuade people in government to hold the line continually on spending and taxes?"

—K. S. ADAMS
Chairman
Phillips Petroleum Co.

"When the services performed by government exceed government's ability to pay for them from taxes, the next step is obvious . . . just take over the whole industry and keep the whole profit instead of just the tax share. And that includes the dividends usually paid to investors. It means also that there's no margin of profit about which to negotiate a general wage increase, or make a plant expansion or improvement."

—HOWARD H. WEST
Director and vice-president
Ohio Oil Co.

Business Is Taking a Breather

James Ashton, *president*, Republic National Bank, Dallas, observes:

"The failure of the economy to surge ahead this year, under what might have been a temporary and unstabilizing inflationary stimulus, has been a wholesome development, because it has helped to forestall a serious recession and to consolidate the base for resumption of real future growth. . . There are, however, sufficiently positive indications in the business picture to conclude that the drive in the economy to move forward quickly and strongly is absent for the time being. . . On balance, the economy has operated on a high plateau for some months now, but appears to be sliding gradually into one of those readjustments. . . . business is taking a breathing spell to adjust to new competitive market conditions, rapidly growing capacity, and shifting consumer preferences."

"BEST WAY TO BEAT CORROSION PROBLEMS? QUALITY PAINTS PLUS TECHNICAL KNOW-HOW!"

Sound advice from a man who knows. Dick Durham, a member of Du Pont's new Technical Service Group, has been solving paint maintenance problems for most of his 27 years in the business.

"No one can afford the high cost of corrosion," says Dick. "That's one reason Du Pont Paints are so often specified. Take, for example, our popular Tank White Enamel. Its lasting whiteness and high reflectivity have meant substantial savings in the petroleum industry by reducing evaporation losses. Its durability is outstanding, too. On one tank in a large refinery, this tough finish lasted more than *20 years* . . . despite exposure to HF and SO_2 fumes, water spray and weathering.

"But quality paints are only part of the story when you specify Du Pont. Just as important, from the standpoint of long-term savings, is technical assistance in applying them. You see, we base our recommendations on a first-hand analysis of your particular maintenance needs. Result: protection that's tailored to the conditions in your plant—*at lowest cost per square foot per year.*"

You'll find a man like Dick Durham working out of the Du Pont district sales office nearest you. Why not take advantage of his training and experience? For complete information on how to beat your *own* corrosion problems, give him a call. Or write: E. I. du Pont de Nemours & Co. (Inc.), Finishes Division, Dept. PW-610, Wilmington 98, Delaware.

* * *

With the Du Pont Finishes Division since 1933, Richard D. Durham is headquartered in his native Birmingham, Alabama. A corrosion specialist, he has helped find the answer to maintenance problems for the paper, textile, chemical, petroleum and steel industries throughout his territory. At home, he's a member of the Birmingham Paint Club and the Birmingham Sales Executives Club.

DU PONT PAINTS

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

THE QUALITY OF THINKING

From an almost unlimited scope of thought, Leonardo da Vinci brought forth a stream of inventions which — in modern form — are in use today. However, Leonardo's greatest contribution was simply the triumph of creative thought applied to practical results. His work will stand for all time as proof that the appraisal of quality applies to thinking as well as to tangible objects and to visible or audible processes.

In a related sense, the quality of engineering is measured by results. And it is by results alone that the minds responsible for an engineering project can be evaluated. When you check the record of Brown & Root's engineering through the years, the high quality of thinking is self-evident. Customer satisfaction from greater efficiency at lower costs has built a worldwide reputation for engineering and construction by Brown & Root.

This squirrel-cage blower, invented by Leonardo da Vinci and put to practical use, was a significant step toward modern mechanical air conditioning.

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Engineers · Constructors

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60-Second Summary / WHAT'S HAPPENING IN OIL

October 14, 1960

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East Coast companies are afraid that the proposals to extend residual import quotas could tie them up in red tape. They are not opposed to including terminal operators, but are worried over the complicated wording in the rule change. . . . p. 16

•

The Federal Power Commission's new area pricing policy has more than the industry confused. Members of the task force trying to draft a new gas bill are uncertain which way to go next, but they're going to keep trying. . . . p. 15

•

Southeast Alberta has proved to be a fertile area for two Canadian independents. They've chalked up a wildcat success record of nine out of eleven tries. . . . p. 26

•

The French have tapped two more Sahara oil fields with a 24-in. pipeline. The 435-mi. line will move 160,000 b/d of crude to French markets by next year. . . . p. 48

•

Refiners will be able to improve lubricant quality with a new process based on thermal diffusion. It's being developed by Standard Oil Co. (Ohio). . . . p. 40

•

The nation's largest crude still may soon be controlled automatically with an electronic computor. Standard Oil Co. (Ind.) is making progress on the project at its Whiting refinery. . . . p. 38

•

Politics and domestic problems may hold up the Canadian government's decision on a national oil policy for perhaps another year. Western producers want action now, contending that Canada can't come near the target set up by the Borden Commission. . . . p. 13

•

Italy's ENI has brought in its first commercial production in the Persian Gulf, according to Enrico Mattei, head of the state agency. He says ENI's wildcat there is capable of making 3,500 b/d. . . . p. 48

•

A device developed by a California service company could be good news for drillers. It not only identifies rock formations during drilling but also detects locked bits due to the freezing of one or more cones. . . . p. 22

•

The Union Pacific R.R. is going into the pipeline business. With Williams Bros., of Tulsa, it will build a $10-million products line from Colton, Calif., to Las Vegas, Nev. . . . p. 56

Up to the Minute / SIGNIFICANT LATE NEWS

October 14, 1960

Humble Oil & Refining Co. has entered into a 20-year "nonjurisdictional" gas sales contract with Southern California Edison Co. The gas, purchased by the utility in Texas, will be used as boiler fuel. Humble's deliveries are scheduled to reach 265-million cf/d by 1967, the fifth year of the contract. Humble's contract will compose the major portion of the 455-million cf/d supply to be moved to California by a Tennessee Gas Transmission line from Texas through Mexico. Humble's over-all contract is for 1.8-trillion cu.ft. at a price of "over $300-million."

Whether the sales contract will be subject to Federal Power Commission review may be decided soon by the U. S. Supreme Court. It is scheduled to rule this fall on whether or not FPC can prohibit a similar purchase of gas for boiler fuel by Consolidated Edison Co. of New York. The Con Ed gas purchased in Texas was scheduled to be transported by Transcontinental Gas Pipe Line Corp. until FPC barred the sale.

Humble heretofore has avoided long-term sales commitments for gas. But a court ruling last year that gas sales contracts in interstate commerce are "for life," and the recent FPC area pricing plan, could influence Humble's future plans.

•

Canada's Cabinet was reshuffled this week, with Trade Minister Gordon Churchill being dropped to an obscure post. The change by Prime Minister John Diefenbaker came sooner than expected (page 13), and moves former Transport Minister George Hees into the key Trade and Commerce position responsible for oil matters.

•

Italy's state-owned ENI group will continue to import 60,000 b/d of Soviet oil for the next four years. In return for the total of 12-million tons of oil, ENI will supply the Russians with 50,000 tons of synthetic rubber and 240,000 tons of tubular steel under a $200-million trade agreement.

•

Humble Oil & Refining Co. will pay a net of approximately $69-million to acquire Monterey Oil Co. of Los Angeles. The agreement of sale, which has been pending for some time, excludes Monterey's stock interest in Transwestern Pipeline Co., estimated to be worth $13-million. The transaction, which will be closed no later than Feb. 1, is subject to approval by Monterey stockholders and by the Justice Dept., which has not commented on the plan officially. Humble plans to operate Monterey's producing properties in six states as a separate division for the immediate future.

•

Texas will offer some Gulf of Mexico lands for leasing Dec. 6. It will be the first offshore offering since Texas won its three-league title last May.

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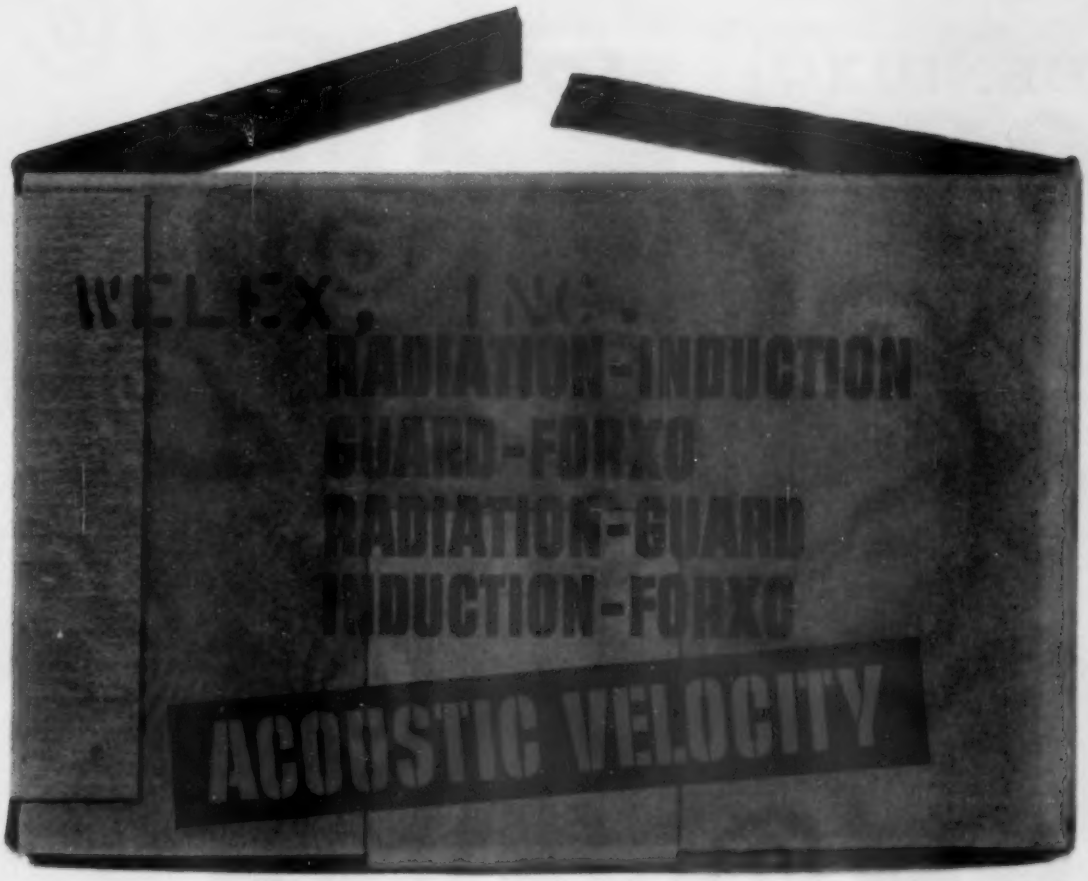
Louisiana's November-December crude allowable will be increased by 15,000 b/d. That will make the initial allowable 983,056 b/d.



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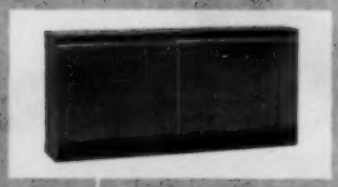

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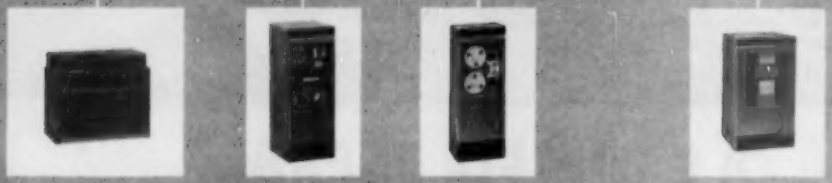

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THE Bendix CORPORATION

Canada May Delay Oil Policy Decision

Prime Minister John Diefenbaker's Cabinet reorganization, plus other pressing problems, could postpone action for perhaps a year. Venezuela's sudden curb on exports to Canada could soften the growing pressures too.

The Canadian Government may delay its decision on a national oil policy for as long as a year, despite continued pressure for action by some producers.

It had been anticipated that a policy would be formulated by the Cabinet before the end of 1960.

Pressure on the government for immediate action has been mounting steadily, especially from Western Canada. But informed sources in Ottawa are doubtful that an early decision will be forthcoming, in the light of current events.

Prime Minister John Diefenbaker is in the process of reorganizing his Cabinet, and Trade Minister Gordon Churchill—the man responsible for oil matters—may be shifted to another assignment, they say.

This would mean that a new minister would have to have adequate time to familiarize himself with oil developments before he could take positive steps on Cabinet recommendations.

In addition, the government is gravely concerned about increasing unemployment in the manufacturing and construction industries.

Ottawa observers feel this may prompt the government to decide that other sectors of the economy are in more urgent need of stimulation now than petroleum production.

Venezuela's decision to prohibit crude sales to Canadian refiners west of Montreal could soften public opinion and ease the pressures for a policy declaration now.

Caracas circles regarded the ban imposed by Oil Minister Juan Perez Alfonzo last week as a maneuver to stave off the threat of Canadian import controls, and possible dislocation of Venezuela's second largest market.

Many Western Canada producers have been seeking government controls to guarantee themselves a healthier slice of the domestic market for their own top-heavy crude reserves.

The limitation imposed by the Venezuelan oil minister is unofficial, and is being carried out, effective immediately, through "suggestions" to oil companies.

But Perez Alfonzo says he will ask Congress for specific legislation if the companies fail to comply.

Venezuela took the position publicly that its crude "should complement and not supplant that of Canada in its natural markets."

"In other words," said Perez Alfonzo, "the Venezuelan government considers that Venezuelan petroleum should not go to the region of Canada situated west of the Province of Quebec.

"Products refined in Montreal, derived from Venezuelan petroleum, should yield their position in the Province of Ontario to products derived from Canadian petroleum."

He said the Venezuelan government is determined to impede crude sales conflicting with this policy "even when they are realized at posted prices."

Among the companies affected by the new rule are Sun, Texaco, Shell, and Creole, a subsidiary of Jersey Standard. Caracas information is that both Sun and Texaco have been shipping 5,000 b/d to Ontario refineries.

Canada's need for a policy decision is being urged on the Ottawa administration by the domestic industry because of the failure to meet the production target specified by the Borden Commission last year (PW—Sep.4'59,p11).

The commission, chaired by Henry Borden, Toronto financier and utilities executive, proposed a goal of 700,000 b/d by the end of 1960. This represented an increase of almost 50% over 1958's crude output.

Production during the first six months of this year has averaged less than 550,000 b/d.

Experts believe that 600,000 b/d is about the maximum the industry can reach by the Commission's deadline.

A rush study of the over-all situation has been completed by the National Energy Board, and turned over to the government for review.

The study, however, contains no recommendations. In the words of Trade Minister Churchill, it is "simply a factual study" to up-date the statistics and references contained in the last Borden Report.

Churchill said his department would analyse the study, then refer it

Significant Sidelights

■ **Refiners have managed to boost the margin between crude and product prices, despite the high runs during most of the summer months. The spread between the average price paid for domestic crude and the refinery selling price of the four principal products rose to 95¢ a bbl. last month, up 20¢ a bbl. since the start of the year, and the highest since mid-1957.**

But the price compilations by the Independent Petroleum Assn. of America show that the markets are still depressed, the result of the general oversupply of the past three years. The spread so far this year has averaged only 81¢ a bbl., compared with $1.08 a bbl. in 1957 and $1.12 a bbl. in 1956.

to the Cabinet as a basis for the formulation of a policy.

The decision that's yet to be made isn't going to be easy to come by.

The battle is between independent producers who want government controls, if necessary, to assure them of a growing share of the rich Eastern Canada market; and the major international oil companies, which use Venezuelan and Middle East crudes in their Montreal refineries.

Some of the touchy points that'll have to be discussed by the Cabinet are these:

- The economic feasibility of moving Western Canada's crude to Montreal;
- The kind of controls that would be needed to compel Montreal refiners to use it, such as import quotas or subsidies;
- The effect of such controls on the prices of products in Eastern Canada;
- Possible international repercussions, such as retaliation against Canadian exports by countries from which Montreal refineries now obtain crude.

Western producers have been agitating for a $350-million pipeline from Edmonton to Montreal.

The Borden Commission refused to recommend this project, but suggested that it be looked at anew in late 1960 or 1961 in the light of developments by that time.

The pipeline, coupled with the import controls that the independents want, would give them a substantial piece of the Montreal-Quebec market.

Opponents of the pipeline argue that the 700,000 b/d figure cited by the Borden group wasn't a target at all—merely a suggestion.

They point to the increase in production of Canadian crude as evidence that the industry isn't doing too badly. They say it's growing at twice the pace of the Canadian economy in general.

Midyear statistics show that exports —all to the U.S., and chiefly to the Middle and Far West—were up 33% over the first half of 1959; imports of crude were down 2.3%; and domestic shipments were up 9%.

At least some of the major companies have professed a willingness to boost their use of Canadian crude by pushing the sale of products from Toronto refineries eastward to Montreal.

This could entail reversal of the flow of products in a Montreal-to-Toronto pipeline. It also could mean an increase in refining capacity in Toronto. Coupled with a normal growth in Canadian crude sales to U.S. markets, this could assure a more rapid rate of expansion of crude production and sales.

This hasn't satisfied Western producers, however. They have formed a new organization to press for a national policy statement, and implementation of the Borden recommendations.

This group is the Independent Canadian Petroleum Producers Assn., (PW—Sep.30'60,p15).

Its avowed objective is to "promote and advance the welfare of the domestic oil industry in Canada in order that Canada's natural resources may play their proper role in the development of Canada."

Its president, Alex G. Bailey, who is vice-president of Bailey Selburn Oil & Gas, Ltd., said the group has received "many requests" for information about participation from oil companies in the West.

There were 31 companies in the original group, and invitations to join since have gone to about 100 other firms, it is understood.

It can be assumed that, once ICPPA get its organization affairs settled, it'll step up the tempo of pressure on Ottawa for an oil policy decision as quickly as possible.

Against this background, the president of one of Canada's integrated companies projected an optimistic picture for the future, and discounted the need for government intervention.

A. Neil Lilley, of Texaco Canada Ltd., made these predictions at a Montreal meeting:

- Demand for crude in Canada should reach at least 1.5-million b/d by 1970, or 75% above the present rate;
- Exports of crude to the U.S., "barring unforeseen restrictions," should be about three times the present rate by 1970; and
- Natural gas production should almost quadruple in the same period.

Texas Allowables to Remain Low

Regulatory officials in Texas appear set on keeping the industry under close surveillance for the remainder of the year.

At least two members of the Texas Railroad Commission feel that the long period of tight allowables—the producing schedule has been limited to eight days since last May—has improved the industry's position. But they feel that more needs to be done.

Commissioner William J. Murray, Jr., predicted last weekend that allowables will be kept low for the remainder of the year.

Murray told the Dallas Petroleum Engineers Club that inventories are 35-million bbl. in excess of desired levels.

He said it would be "impractical" to boost Texas production under such conditions.

The progress in reducing inventory surpluses has been fine so far, he said, but "much more is necessary, and Texas apparently will have to continue doing more than its share to that end."

Murray predicted that some upward adjustments in allowables could be expected after Jan. 1.

Commission Chairman Ernest O. Thompson said that the industry is in for smoother sailing in the years ahead, but that "there is just too much gasoline" now.

"Too much gasoline," he observed, "means that crude won't sell, so the only thing to do is to reduce crude production."

Thompson charged that a "sane oil industry" is the responsibility of company executives. He said that the industry's plight of the past two years has been brought on by "large and small refiners who can't resist filling a hot still to capacity."

Thompson said that while other states may try to steal Texas' crude markets, "they are in the same market and the same economic boat."

One basis for the criticism of the commission's tight allowable policy came to light this week when R. N. Blaize, vice-president of Signal Oil & Gas Co., confirmed that the company had made a spot purchase of 1,000 b/d of Wyoming sour crude for delivery in November and December to its Houston refinery.

The crude will move by pipeline from Wyoming to Wood River, Ill., and thence by barge to the Gulf Coast.

For the first time this month, all purchasers of Texas crude will be required to report their refinery runs and percentage of capacity operated to the commission.

Such a request has been urged (PW —Oct.7'60,p3).

The commission wants data on runs during September as well as individual company data on crude and product inventories, compared with estimated desirable levels, on Sept. 1.

Gas Bill Task Force Will Keep Trying

The task force attempting to come up with a new gas bill apparently is as confused as the industry itself over the effects of the Federal Power Commission's area pricing policy.

The group, representing producers, transmission firms, and distributors, met in New York City last week. But after hours of discussion, the most they could decide was to keep plugging for remedial legislation.

Discussions of area pricing produced a variety of reactions at the latest meeting of the group, with "everyone wondering how it will fit in" with legislative proposals.

A member of the task force told PETROLEUM WEEK that "a lot of uncertainty" prevailed in the meeting over the meaning and probable impact of the FPC plan.

"Everybody recognized that it will take from three to five years of court tests before we really know what area pricing means," he said.

The attitude of producer representatives, he went on, is that FPC's new policy "doesn't lessen the need for a gas bill." Pipeline and distributor spokesmen were described as being "somewhat hopeful" that the FPC approach may be a solution to producer regulation.

"We will just proceed along, and try to develop some agreement," he explained. One thing is certain, he added: "There will be no interruption in the efforts to develop something that can become the basis of legislative effort."

Meanwhile, former FPC Commissioner William R. Connole hailed the policy decision as a brake on field prices.

Connole told the Atlantic City (N.J.) meeting of the American Gas Assn. this week that, "Wellhead and field prices will continue to escalate," but at a more predictable rate.

This, he said, will result in part from FPC's new scheme. He emphasized, however, that other economic factors "which would operate even in the absence" of the commission's new policy, would bring the same result.

He listed these factors as "the increasing impact of competition from other fuels, the continued softening of the oil market, and the availability of gas" from Canada and Mexico.

FPC's action was "a little tardy, but nonetheless welcome, and will have a salutary effect," Connole said.

FPC's area prices will have no immediate effect, he went on, because the levels chosen were substantially those that the commission had been following informally for months.

Uncertainties stemming from court cases will muffle the effects of the decision for some time, he added.

The Texas Independent Producers & Royalty Owners Assn. both praised and criticized the pricing program.

Acting President J. F. West said his group is pleased that FPC recognized the impossibility of regulating thousands of independent producers as utilities.

But, he said, the new order will have a tendency to "freeze existing prices at unrealistic levels in terms of gas' worth as a preferred fuel." This, he said, "would discourage necessary drilling for new reserves."

Holman Gets API's Gold Medal

Eugene Holman, retired chairman of Standard Oil Co. (N.J.), was named this week as 1960 recipient of the American Petroleum Institute's Gold Medal for Distinguished Achievement.

The award, considered to be the oil industry's highest salute to an individual, will be presented during the course of API's annual meeting in Chicago next month.

In keeping with tradition, the scroll that accompanies the Gold Medal, will be kept secret until the formal presentation is made at a general session on Wednesday, Nov. 16.

Holman spent 40-odd years in the petroleum industry prior to his retirement last spring. It is anticipated that the tribute will give recognition to his many achievements.

The API Gold Medal was established in 1945.

Interior Proposes New Lease Rules

Regulations to implement the new omnibus oil and gas leasing law have been proposed by the Interior Dept.'s Bureau of Land Management.

The leasing act provides for higher rentals on new leases, higher lease limits, and longer terms for noncompetitive leases (PW—Jul.1'60,p13).

Here are some of the major regulations proposed:

- Noncompetitive oil and gas leases now outstanding will be allowed a five-year extension at a rental of 50¢ per acre for the extended period; noncompetitive leases issued after Sept. 2 (the effective date of the new law) will be at the annual rate of 50¢ per acre for the first five years, and $1 per acre for succeeding years.
- The rental for competitive leases prior to discovery would be raised from $1 to $2 per acre per year.
- Noncompetitive leases would be issued for a single term of ten years, instead of five, and competitive leases would continue to be issued for five-year terms.

The chairman of the House Interior Committee, Rep. Wayne N. Aspinall (D., Colo.), told Interior officials that he is "absolutely opposed" to the increase in rentals recommended.

A Bureau of Land Management spokesman says consideration will be given to cutting annual rentals from the sixth year in certain areas.

Edward Woozley, of BLM, says this may be done "to encourage the greatest ultimate recovery."

He adds that such special standards may be developed for areas with unusually severe obstacles to developments, or with limited exploration and development histories.

There were some 147,000 federal leases outstanding on June 30, covering 121-million acres.

Residual Import Plan Poses Knotty Problems

The Interior Dept.'s plan to allow residual fuel import allocations to more companies on the East Coast threatens to saddle the industry with more complex regulation, close observers say.

The proposal to broaden the residual import program to include deepwater terminal operators along the eastern seaboard were announced last week.

Primarily the proposed change would separate the East Coast (District I) from the other three districts east of the Rockies for allocating residual fuel oil.

The present residual importers would continue to get an allocation based on their historical position in 1957.

But once the over-all allocation for the district is set for the quarter commencing Jan. 1, a set-aside would be deducted from the total and granted to newcomers—those who operate deepwater terminals.

The set-aside has been unofficially estimated at from 12% to 15% of the total that may be granted for the district.

Under-Secretary of the Interior Elmer F. Bennett said the proposals would provide an "orderly" method for giving allocations to importers who cannot qualify under the current requirements.

Historical importers, he added, will get a reduced share of the market to permit some for newcomers, but there will be no "sharp reductions" in allocations.

Interior officials estimate that if the proposals are adopted only 12 to 14 terminal operators and possibly two majors would be added to the District I import list. The latter two are Cities Service Co. and Sun Oil Co. Some other present importers could also qualify as terminal operators, industry sources say.

The industry has until Oct. 27 to submit comments on the proposals, after which Interior officials will decide whether or not to recommend an amendment to the Presidential proclamation.

The proposals offered are far from "orderly," some oil men say. One comments: "The bookkeeping may cost more than the quota is worth."

The latter observation was in reference to the eligibility requirements for terminal operators and difficulty of computing so-called "terminal inputs."

Many officials admit that the proposed revision is difficult to understand and appears to create some unnecessary complications.

The definition of a deepwater terminal already appears to be one major point of argument.

Interior defines it as "an installation which consists of bulk storage tanks, pumps, and pipelines suitable for storage, transfer, and handling of residual fuel oil, and which is adjacent to navigable waterways and to a ship's berth that permits residual fuel oil to be delivered to the installation by direct connection from a tanker drawing at least 30 ft. of water while the tanker is moored in the berth at low tide."

One basic question raised: Is an upriver operator with a berth that can handle a 30-ft.-draft tanker eligible if the channel of the river is not deep enough to accommodate a 30-ft. tanker fully loaded?

Perhaps the most questions will be raised on just how terminal inputs are to be computed for the purposes of arriving at individual quotas.

The complications on inputs center around whether an operator had title to and possession of residual fuel oil within District 1 during the period for which his terminal inputs are to be computed.

The normal intercompany transactions on sales of residual under refinery processing arrangements, for example, raise the question as to which terminal will receive credit for the input: the processing company, the company for whom the residual was processed, or possibly a third party who purchased the residual and is classified as a terminal operator?

The proposed regulations provide that eligible applicants must reduce terminal inputs by the quantity of residual fuel oil that they owned but which was transferred during the allocations computation period to others who were in the business of selling resid in District 1.

But company officials say that "backtracking through the books" to trace each barrel received, transferred to another terminal, or sold outright will be a massive job.

"There's little doubt but that a lot of double ownership will show up to affect the over-all quotas," one major company official predicts.

Another knotty problem that may arise is the possibility of further defining Interior's term, "residual fuel oil to be used as fuel."

Some coastal refiners pull residual out of their terminal storage and process it by fuel oil reduction methods into lighter products during periods of surplus resid.

Processing the resid would take it out of the "to be used as fuel" category, but the question posed is, how accurately can this be computed?

Some company officials speculate on whether or not large industrial users of resid may be able to qualify for direct quotas under the proposed revision in the rules.

They cite the case of residual customers who have their own deepwater terminals and have purchased resid in cargo lots.

The proposals define eligible terminal importers as those "in the business of selling in District 1 residual fuel oil to be used as fuel. . ."

But there is some question among oil men as to whether or not a large utility or industrial user of resid could qualify as a "seller."

Despite the worries over the complications that might arise under the wording of the plan, most companies involved in residual sales say the move is a step in the right direction.

The general feeling is that the proposals, if adopted, will break the freeze to the 1957 historical position that had been in effect.

"The apparent intent of the Interior Dept. is to limit the eligibility to import residual to primary suppliers, or wholesalers," one company executive comments. "But I do not think that the regulations as I best understand them provide a specific cut-off point. There are other wholesalers of petroleum products who handle resid that may very well find an opening to apply for an allocation to import, which could further complicate the picture."

Honolulu Oil Sets Deadline for Buyers

Honolulu Oil Corp. has set a deadline of Nov. 1 for would-be purchasers of the company to submit "expressions of interest."

L. A. Cranson, president, said data on Honolulu Oil has been furnished to a "considerable number" of companies interested in purchasing Honolulu's assets.

Visa Snafu Holds Up Soviet Oil Team

Mystery and confusion surrounded the reciprocal visit of the Soviet Union's team of oil experts for many hours early this week.

Until Tuesday noon, there was no word on their whereabouts, although the Soviet delegation had been scheduled to land at New York's Idlewild airport Monday evening.

Later, the Soviet U.N. delegation reported that the Russian oil men were still in Moscow on Monday, and wouldn't arrive until Thursday.

They blamed a snafu in essential U.S. visas for the unscheduled delay. As a result, the Soviet team had to cancel its plane reservations.

The itinerary for the Soviets' inspection tour of U.S. petroleum installations and oil fields was thus thrown out of kilter from the start.

The group had been slated to participate in a briefing at API headquarters Tuesday. Several State Dept. representatives were on hand for the briefing, unaware that everything had been postponed.

It is anticipated, however, that this weekend will be spent in Washington, where the Soviet oil men will visit with Bureau of Mines' officials.

Through the balance of the month, and on through the first part of November, the Soviets will have a first-hand look at oil fields and operations in the Gulf, Southwest, West Coast, Mid-Continent, and Western Pennsylvania areas.

The traveling part of the tour ends officially on Nov. 7, and the group will return to New York for final consultations with API and industry executives.

They'll stay in New York until Nov. 12—and will have an unexcelled opportunity to see freedom and free elections in operation on Nov. 8.

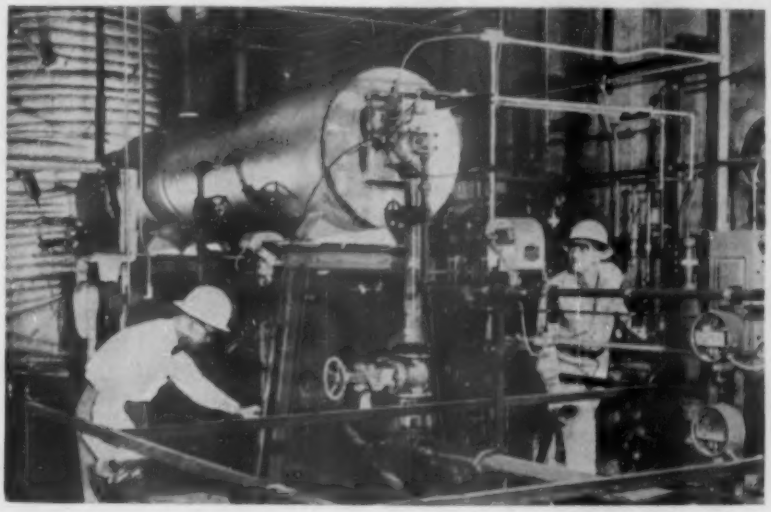
The ten-man Russian delegation is composed of engineers and deputy chiefs of various petroleum organizations and committees. Four Americans will accompany them on their tour.

Identities of the Soviet oil men were listed as:

Suren Akopovich Arzumanov, deputy chief, State Dept. Committee, automation and machine building; Lev Andreevich Cvozdetski, scientific worker, USSR Academy of Sciences Oil Institution; Viktor Aleksandrovich Kasatkin, director, oil refinery; Grigori Ivonovich Kazmin, engineer, Crozny Scientific Research Institute; Z. L. Khachatryan, engineer with Construction Ministry; Sepan Ivanovich Kuvykin, chairman, Bashkir Sovnarhoz; Gennadi Konstantin Maksimovich, specialist on oil mining, Economic Council; Imran Musaevich, head engineer, Azneft combine; Denis Nikolaevich Polyakov, section chief, foreign relations, State Dept. Scientific Technical Committee; and Boris Sergeevich Semenov, engineer technologist, All Union Scientific Research Institute Oil Industry.

The four U.S. representatives are Frank L. Dennis, special assistant to API President Frank M. Porter; Robert Ebel, of the Interior Dept.; Harry Brooks and Dr. Norman P. Neureiter, escort interpreters.

Esso's pilot blast furnace shows . . .



Fuel Oil Can Aid in Iron Making

Capacity of blast furnaces can be increased, and their operating costs reduced, with the use of heavy fuel oil and preheated air in place of coke.

That is the answer found by Esso Research & Engineering Co. after two years of study of a 75-year-old iron-making idea. The concept the company developed is that hydrocarbons, particularly heavy fuel oil of high heat content, can be injected into the bottom of blast furnaces and, in many circumstances, can increase capacity by displacing coke, resulting in lower costs of hot metal production (PW—Jul.1'59,p27).

M. J. Rathbone, president of Esso Research's parent, Standard Oil Co. (N.J.), said that the development is one result from a comprehensive program to explore new uses for petroleum products.

The primary advantage offered by fuel oil in iron-making is that the hydrogen content in the petroleum fuel contributes additional "reducing" gas to speed the reduction of ore into iron.

In conventional processes, coke, iron ore, and limestone are fed into the top of a blast furnace, and hot air is injected into the bottom.

With the fueling method developed by Esso Research, fuel oil is injected along with preheated air in the bottom, with the fuel serving as part of the source of heat as well as a source of reducing gases.

Use of fuel oil in blast furnaces will be possible with the development by Esso Research & Engineering of an injection and control system.

To develop a suitable system, the company built a pilot plant to simulate the part of a blast furnace most critical to oil injection.

A primary concern in the design of the system was to find an injection method that can be installed in large furnaces without interruption. In iron-making operations, blast furnaces stay on line for as long as eight years of continuous operation.

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P. O. Box 1184 Houston, Texas

What's New / IN THE INDUSTRY

Louisiana, Mississippi, and Alabama lost their plea this week for a Supreme Court rehearing of their Tideland claims. The high court refused to reconsider its May 31 decision, in which it ruled that the offshore boundaries of the three states are limited to 3½ mi. while those of Texas and Florida are three leagues—about 10½ mi. The three states, in their appeals for a rehearing, contended that the Supreme Court erred in its interpretation of the Submerged Lands Act of 1953, and argued further that an old map found in the national archives supported their claims. Briefs submitted to the high court by 13 other states endorsed their pleas. One, from Florida, held that the May 31 decision was "not justified by the history of the region," and another, from California, averred that Congress did not intend to accord "grossly unequal treatment" to states under the Submerged Lands Act.

•

A wildcat regarded as the most significant in Montana in recent years tested at the rate of 2,000 b/d last week. Brought in by T. E. Murphy Corp. 13 mi. northeast of Wolf Point, it yielded 42.6-gravity crude from a 25-ft. interval of Devonian limestone at the 7,660-ft. level. Crude has been produced from the Devonian elsewhere in the Williston Basin, but the nearest to Murphy's wildcat is the East Poplar unit, 15 mi. to the east. The company said the test flowed 87.1 bbl. an hour through 7/16-in. choke. Murphy and Placid Oil Co., owned by H. L. Hunt, hold major interests in substantial acreage surrounding the test.

•

British Petroleum Co. denied this week that it is "considering a bid" for Ultramar, Ltd. PETROLEUM WEEK reported last week (PW—Oct.7'60, p10) that BP was preparing an offer for the stock of Ultramar.

•

Soviet oil exports could disturb the balance between supply and demand in Western markets this year, according to Leo D. Welch, chairman of Standard Oil Co. (N.J.). Welch, visiting Hamburg, Germany, last week, estimated Soviet exports of crude and products to the Free World would "probably" reach 500,000 b/d in 1960. Last year's exports amounted to 300,000 b/d, and Welch said this year's greater volume could affect Western markets and possibly depress prices. The 1960 estimated exports to the Free World would be about equal to the USSR's total exports to the West and satellite nations in 1959.

•

Richfield Oil Corp. has acquired a 50% interest in a 22-mi. pipeline on Alaska's Kenai Peninsula. The $5-million line is being completed by Kenai Pipeline Co., a subsidiary of Standard Oil Co. of California. It runs from Soldotna, south of Anchorage, to Cook Inlet, and is expected to be ready to load tankers by early next month. Crude produced in the Swanson River and Soldotna Creek areas from properties held jointly by Richfield and Standard, and by other companies, will be shipped through the new line.

•

Union negotiations for an 18¢ hourly wage increase opened this week at American Oil Co.'s Texas City (Tex.) refinery. A. F. Grospiron, of Local 4-449 of the Oil, Chemical & Atomic Workers Union, said similar negotiations will begin shortly with Amoco Chemical Corp. and Republic Oil Refining Co., also of Texas City. Some 1,200 Amoco employees are affected by the current negotiations. Grospiron said the talks are part of the national OCAW wage campaign.

Quality Must Be Preserved If Performance Is To Be Assured

. . . and the final proof of quality in sucker rods is how well they perform in the well.

That is why LIBERTY MANUFACTURING COMPANY of Texas spares no effort or expense to assure producers everywhere that Liberty Sucker Rods arrive at the well site in the same excellent condition as when they left the inspection line at the plant.

This is accomplished by attaching rubber thread protectors both to the pin ends and coupling ends of the rods. These protectors are color coded for easy identification of rod types. They afford genuine shock resistance, will not vibrate loose during transit, and are quickly removed without hammering as the rods are made up to go into the well.

Palletized Packaging is available upon request at no additional charge. This type of packaging cuts handling costs and insures the delivery of straight rods to the well.

The careful preservation of quality in LIBERTY Rods is reflected in longer, trouble-free performance in the production string. For in all operations, from manufacturing to safe delivery, the goal at LIBERTY is not to produce the most sucker rods in the least time, but to produce the finest sucker rods . . . regardless of time!

FOR EXCELLENT PRODUCTS AND SERVICE
SPECIFY LIBERTY SUCKER RODS AND PUMPING UNITS

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MANUFACTURING COMPANY OF TEXAS

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Looking Ahead in Washington

Washington
McGraw-Hill
Bureau
October 14, 1960

Interior Dept. officials turned their attention this week toward possible changes in crude import allocations. There are no indications that basic changes in the procedures will be made, but officials are concentrating on the various complaints that have been leveled against the program.

Producers are complaining that too many uncontrolled factors weaken curbs on crude imports. The Texas Independent Producers & Royalty Owners Assn., for example, wants import allocations determined after consideration of increased production and use of natural gas liquids. Other complaints are against withdrawal from inventories, Canadian exemptions, and crude shipments from the Western states to areas east of the Rockies.

Specifically, Interior officials are studying the definition of "total demands." The requirement in the Presidential order establishing mandatory controls is that imports in the refinery districts east of the Rockies —Districts I-IV—be held to a percentage of total demand. Within a few weeks, the department should be able to decide whether to recommend that the White House alter and make more definitive the executive order's language. Although the possible changes are in their early stages, they could become effective Jan. 1 if officials decide they are necessary for adequate administration of the program.

•

Watch for the Federal Power Commission's next move on area pricing to come in a Panhandle Eastern Pipe Line Co. rate case. FPC Chairman Jerome K. Kuykendall has said publicly that he thinks the area pricing concept adopted by the commission for independent producers should also be extended to pipeline-producers. Best bet for implementation of this thinking is Panhandle Eastern's $7.1-million annual rate increase case, now awaiting FPC decision. Panhandle still stands on the "fair field price" theory for its gas—the same issue on which the company lost in the courts in the City of Detroit case. FPC apparently is ready to challenge the court ruling by using area prices in the Panhandle rate case, which supersedes the remanded Detroit case.

•

Official expansion on the Foreign Petroleum Supply Committee may come next month. The committee, advisory arm of the government on world oil supply, is adding new company members to meet requirements of the Defense Dept. for special oil assignments. The Attorney General has approved an arrangement under which the group will, in effect, take over the duties of the Pentagon's old Military Petroleum Advisory Board. The Interior Dept. hoped to have the reorganization completed in September or October, but meetings of the committee did not materialize. Now, a session in November is likely.

•

The Justice Dept. is watching Teamster Union activities in organization of retail gasoline dealers. Robert A. Bicks, antitrust chief, says the antitrust immunity of labor unions does not extend to price-fixing or interference with competition. He cites the recent Hammond (Ind.) case in which a Teamster official and officers of a local dealer association were convicted on charges of conspiring to fix gasoline prices. Bicks is filing several cases to determine limitations on the antitrust immunity given unions by Congress.

How high speed gas turbines make possible new Solar centrifugal compressor for industrial use

by Leon Wosika, chief of preliminary design
and John Glessner, project engineer
Solar Aircraft Company

The development of the high-speed industrial gas turbine is resulting in improvements in industrial equipment used in conjunction with these prime movers.

A practical centrifugal compressor for the low-volume range is one of the first of these developments.

Traditionally, reciprocating compressors have been used in the range from 500 to 1000 hp when suction pressures are from 200 to 800 psi and volume flows are 100 to 1000 cubic feet per minute at suction temperature and pressure.

It has long been known that a centrifugal compressor would be less expensive to own and operate in this range if high speed drivers were available. For example, direct drive speeds from steam turbines have been limited to 10,000 to 12,000 rpm. When gears are used to obtain high speeds, their cost and complexity has made the compressor-set look less attractive. So, in the range from 100 to 1000 suction cubic feet per minute, a low speed, conventionally designed centrifugal would have to employ compressor rotors of perhaps 15 inches in diameter, and would necessarily have very long, narrow flow passages – resulting in poor efficiency.

Now, however, the availability of industrial high speed drivers, particularly the Solar Saturn T-1000 gas turbine engine, has provided the impetus for Solar to design and build a line of efficient centrifugal compressors for the low volume range. The compressor uses compressor rotors seven inches in diameter. At approximately 20,000 rpm, wheel tip speed is only slightly over 600 feet per second, resulting in low pressure ratios per stage. High rpm and low tip speed plus careful design result in a high efficiency of 70 to 75 per cent.

High efficiency is not the only immediate advantage of Solar's compressor. When it is coupled with a gas turbine in the 500-1000 hp range, no gearbox is necessary since the turbine rotating speeds of about 20,000 rpm match those of the compressor.

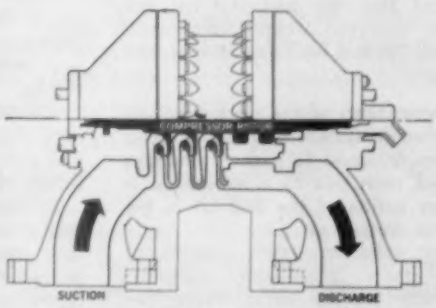
Together, the two machines make a lightweight, compact package – in the case of the Saturn T-1000 turbine, less than 7000 lbs and 300 cubic feet. This factor makes transportation and installation much easier and more economical than with the traditional compressor installation.

This portability makes central maintenance in a convenient, well-equipped shop a practical reality. In addition, the small size, light weight and absence of unbalance forces minimize foundation requirements.

A truly unique feature of the compressor is its modular design – the use of interchangeable staging to accommodate changing pressure and flow characteristics. High efficiency is maintained over the entire range of flows, 100 to 1000 suction cubic feet per minute, by use of pre-engineered, off-the-shelf compressor stages. Each stage is designed for a different flow, but is mechanically interchangeable with any other stage.

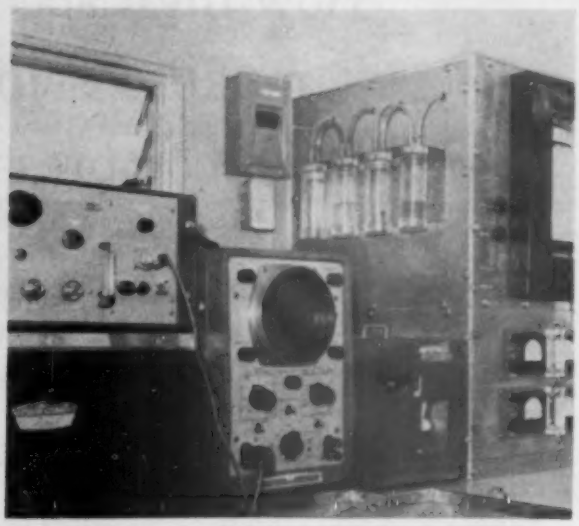
Several advantages result from modular design: (1) It reduces costs, mainly through volume production of parts and improved manufacturing methods. (2) It gives the compressor extreme service flexibility by allowing the quick change of stages in the field to accommodate new flows and pressures. (3) It allows quick delivery because all parts may be shipped directly from stock with no factory modifications necessary. (4) It tends to increase reliability and efficiency through repetitive manufacture of standardized parts.

If you wish additional data on either the compressor or the Saturn T-1000 turbine, or both, write Dept. H-169, Solar Aircraft Company, San Diego 12, Calif.



Solar Centrifugal Compressor

SOLAR
AIRCRAFT COMPANY
A subsidiary of International Harvester Company



COLLECTOR system (left) is mounted on kelly sleeve below swivel. Recording system (right) is other main component as . . .

Device Logs Rocks During Drilling

A California service company has successfully field tested a device for logging rock rigidity. It uses strain gages to identify various rocks during drilling.

The company—Cal Pan Am Well Logging Co., Ventura—has found that the device gives distinctive curves for shale, medium hard sands, sandstones, chert, limestone, and igneous rocks.

It so far is unable to distinguish between soft clayey sands and soft clays.

During testing to obtain the lithologic information, the company discovered that the tool also has the ability to record a curve which indicates a "locked bit" due to defective cones.

Components of the device include a collector system and a recording system designed to pick up changes in rock units due to a difference in torque action of the drill bit in the various formations.

The collector system consists of two strain gages—one mounted vertically on the sleeve below the swivel, the other, which serves as a compensator, mounted horizontally on the swivel; two silver plated slip rings which are mounted on the sleeve just below the swivel; and one wiper arm with two bronze wipers and graphite brushes.

The recording system includes a carrier preamplifier, a Sanborn recorder, and a Hewlett-Packard oscilloscope.

The two systems are connected electrically by a 250-ft., three-conductor tyrex cable, which is taped to the kelly hose.

The different formations are detected by changes in tension of the drill stem as measured by the strain gage.

As the teeth of the bit bite into the rock unit, the rate of rotation of the bit decreases, but the kelly continues to rotate at a uniform rate.

A torque action takes place, which causes the pipe to wind up between the bushing and the bit.

While the pipe is winding up and lifting the bit off bottom to unwind (about once per revolution), the tension increases on the drill stem above the kelly bushing.

The strain gage on the sleeve measures the changes in tension of the drill stem, which are due to the torque action of the bit.

In recording, the relatively straight base line of the curve represents the time element when the pipe is unwound. Departures from the base line are pulses representing the time interval when the bit is torqueing up.

Since the bit torques differently in various rock units, the character of the pulses also will change, making it possible to differentiate between shales, sands, chert, limestone, and igneous rocks.

A second valuable function of the device is its ability to detect a locked bit due to the freezing of one or more cones.

It's been found through experience that the bit will lock if the cones freeze during the torque action, or if there is metal in the hole.

It's also been found that this locking action can seldom be detected by the driller. Drillers on occasion have lost all three cones and continued to drill not knowing the cones were frozen.

When the bit locks momentarily, an abrupt shortening of the pipe takes place. As a result, an abrupt change in tension is measured by the strain gage.

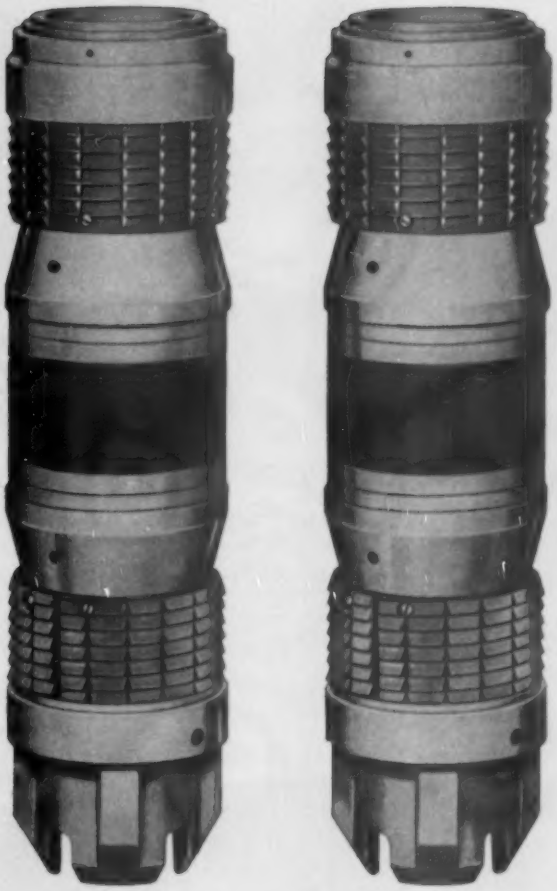
The gage is strained to its capacity, which is represented by a straight line at the far end of the pulse in recording.

This detection of a locked bit is said to be a preventative of fishing jobs. Use of the device, in one instance, is credited with preventing seven fishing jobs for one company on two holes.

The logging units are housed in portable trailers for jungle and offshore service.

The trailers are rigged so that the wheels may be removed and the trailer made into a skid-type unit that can be picked up by crane or helicopter to make it adaptable for use in jungle locations or on offshore platforms.

With the wheels off, the trailers can be transported in planes, also.



LEFT: SIZE 3B
BAKER WIRE LINE
BRIDGE PLUG
PRODUCT 400-N
RIGHT: SAME

IDENTICAL

The Baker Bridge Plug on the left was made a year ago. The one on the right is new. The two are identical—no design changes for a year. Why no changes? Is the design that good? The answer is yes.

For the first few years, changes came fairly often. Now they come few and seldom. The design is now a stable one—tested, refined, proved in thousands of wells. The weak points have been sifted out, the strong points made stronger.

The design is stable but it isn't frozen. Our engineering studies continue. We're always on the alert for any chance to make a good design better.

And consider this: the two plugs in the picture are not only alike in design, they match each other in quality. They're identical in dimensions, materials, workmanship. The men who design and build Baker plugs insist that it takes uniform quality to give you uniform dependability.

Today's Baker Bridge Plugs master any well—the average wells and the hot, high pressure wells. They are tough and reliable.

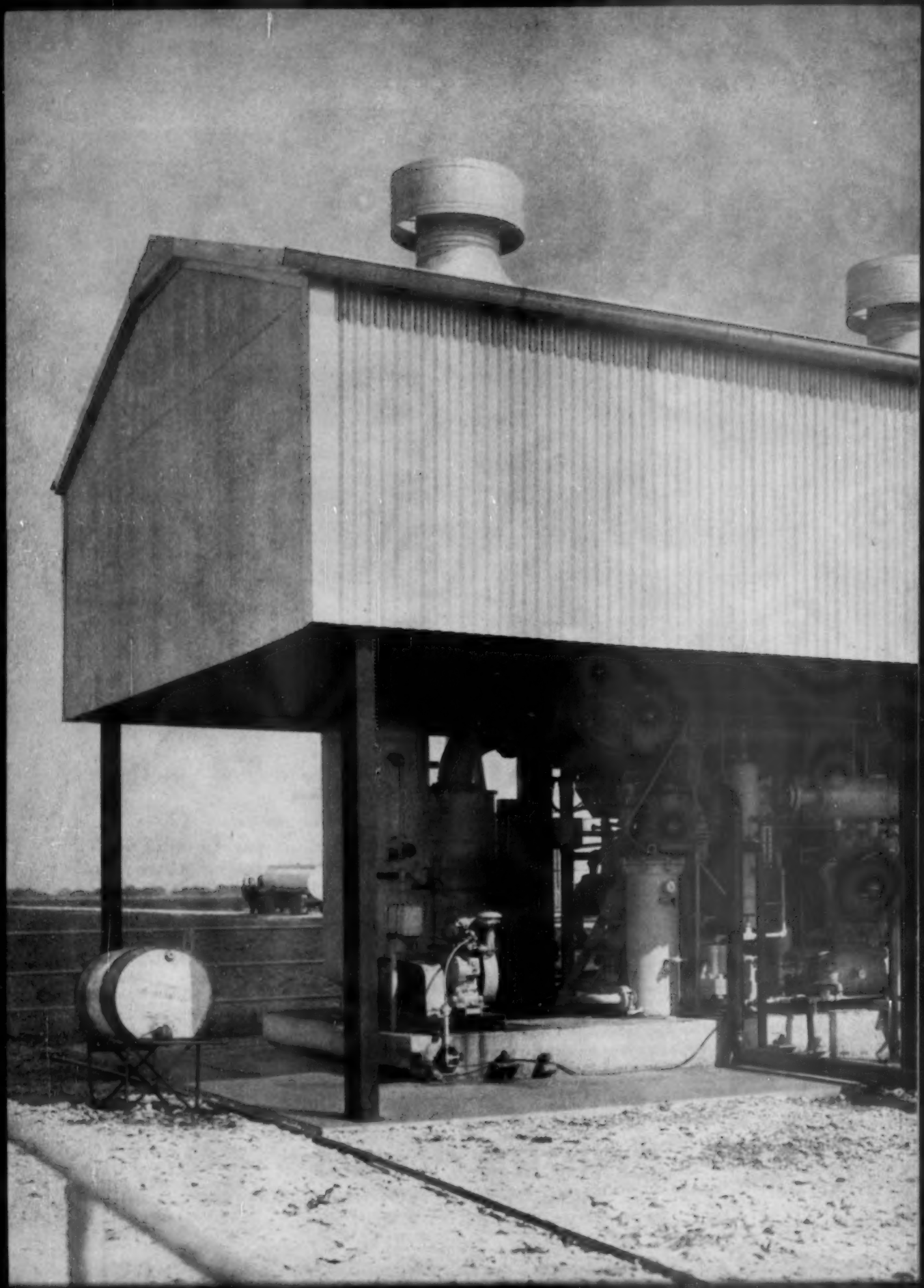
Baker plugs are short. They drill up quickly and easily. They're made in drillable, corrosion-resistant cast iron for permanent service, and in fast-drilling magnesium for temporary service.

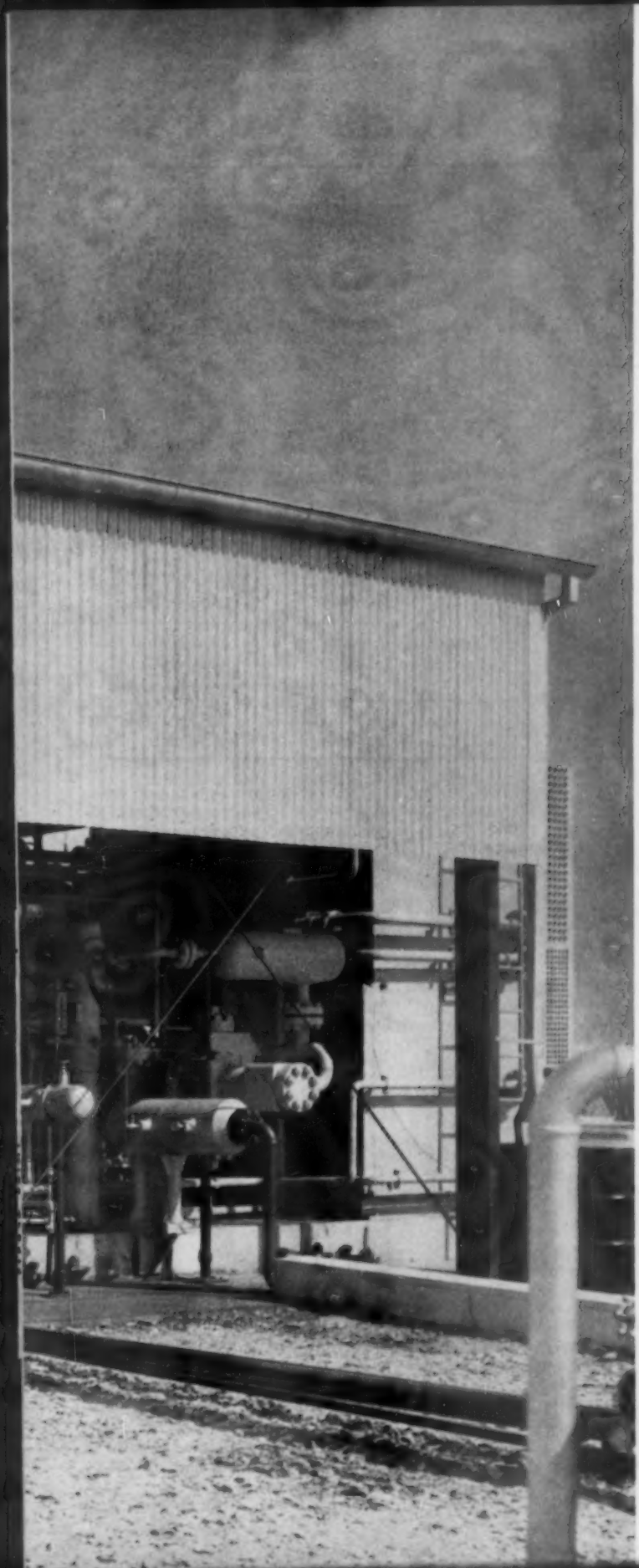
Leading Wire Line Companies set Baker Wire Line Bridge Plugs accurately and promptly. Other models can be set on tubing or drill pipe.

BAKER BRIDGE PLUGS

BAKER OIL TOOLS, INC. HOUSTON / LOS ANGELES / NEW YORK

BAKER





Max Powell, Chief Engineer of Russell Maguire.

FACTS REVEALED ABOUT REMARKABLE ACCEPTANCE OF SLHC

Sales up . . . and up . . . and up. That's part of the history of Worthington's SLHC gas engine-compressor. What is the secret behind this remarkable acceptance?

Listen to Max Powell, Chief Engineer of Russell Maguire, talk about an SLHC on a cycling operation in the Faith-Mag Field,". . . we wanted something that would run all the time—this does . . . we're pleased with it! Take last May, for example. We ran the SLHC unit 734 hours. That's 98.7% operation.

"Today this Worthington SLHC engine-compressor is handling almost 6 million cfd, taking suction at 750 psi and 1000 psi, and discharging at about 5000 psi.

"No, no one operates it. It's running unattended. Why do we like it? It's getting the job done . . . wish everything did."

When asked about maintenance costs, Mr. Powell didn't know. They were negligible—hadn't been high enough to keep separately on the books.

Mr. Powell didn't mention fuel economy, as some users do. Of all "under 1,000 hp" engine-compressors on the market, the Worthington SLHC is the only one specifically designed for turbo-charging . . . and so operates on up to 21 percent less fuel.

If you want fuel economy and dependability in the same unit, there's ample reason to buy the SLHC engine-compressor. Call your Worthington representative, or write Worthington Corporation, Section 43-17, Harrison, New Jersey.

Worthington SLHC gas engine-compressor packaged by A. M. Lockett Co. and operated by Russell Maguire at a Unitized Gas Cap Cycling Project, Faith-Mag (9500' Frio) Field, Matagorda County, Texas.

WORTHINGTON

Canadian Duo Hits on Alberta Wildcats

A team of Canadian independents has chalked up a nine-of-eleven wildcat success record on a 73,000-acre block in southeastern Alberta.

Dynamic Petroleum Products Ltd. and Western Leaseholds Ltd. compiled the impressive record in a drilling program that was launched in the fall of 1959.

The block is located between Cessford and Atlee Buffalo gas fields, which are 13 mi. apart at their nearest field limits.

Six of the wildcats have been completed as single-zone gas discoveries, one as a triple-zone gas discovery, and two as oil discoveries.

The single-zone gas discoveries were completed in the Bow Island sands, Blairmore, and Sunburst sands. The triple-zone strike was completed in two Sunburst sands and in the Basal Colorado.

The first oil discovery was in the Basal Quartz, and the other was in the Detrital zone.

Approximate average depth of the wells is 3,200 ft. Distances between the gas successes range from 2⅜ mi. to 13 mi. The oil discoveries are 8 mi. apart. The two abandonments were in lsd 10-25-21-10w4, on the western side of the block, and lsd 12-32-22-8w4, on the northeastern side.

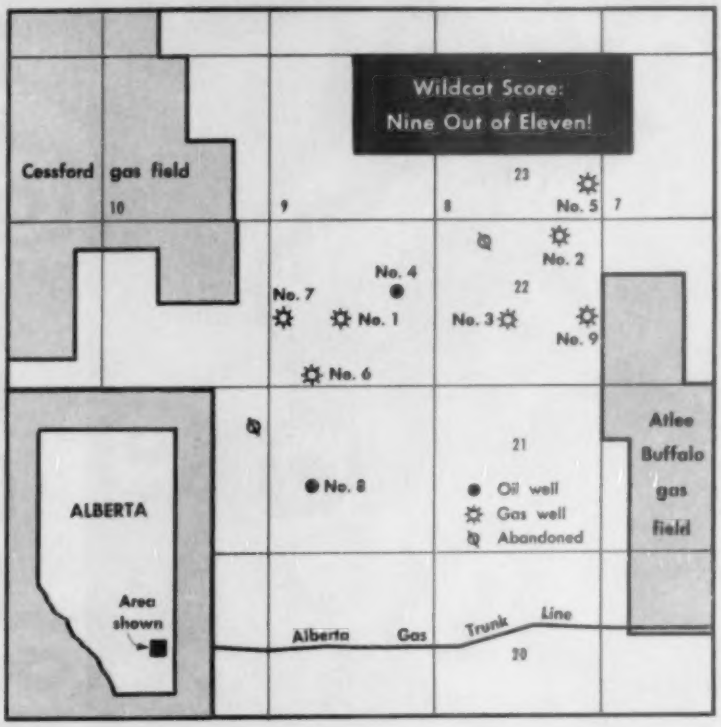
The first wildcat success in the Southeast Cessford project was the triple-zone gas discovery—Dynamic—Western No. 1, lsd 11-16-22-9w4.

Exact producing intervals and production test results are being withheld. A Dynamic spokesman, however, gave PETROLEUM WEEK the approximate depth of the producing zone in each success and the approximate drillstem test figures. All of the approximate depth figures, he said, are at the middle of the producing zone. All choke sizes in the tests were ½ in.

The No. 1, he continued, had an open flow of 7.6-million cf/d of gas from the Lower Sunburst at 3,100 ft., 24-million cf/d from the Upper Sunburst at 3,060 ft., and 4.5-million cf/d from the Basal Colorado at 2,800 ft.

The other gas discoveries completed range in production from about 890,000 cf/d of gas to 5.7-million cf/d. Final tests are yet to be made of the oil successes.

The Dynamic-Western No. 2 was completed for 4.9-million cf/d in the Bow Island at 2,330 ft. No. 3 gave 2,240,000 cf/d at 2,900 ft. in the Blairmore. No. 5 gave 887,000 cf/d in the Bow Island at 2,150 ft. No. 6 had 1,350,000 cf/d in the Bow Island at 2,500 ft. No. 7 had 1,070,000 cf/d in the Bow Island at 2,160 ft. And No. 9 had 5.7-million cf/d in the Bow Island at 2,430 ft.



The first oil discovery, the Dynamic-Western No. 4, lsd 11-23-22-9w4, recovered 1,130 ft. of gassy oil on one test, and 1,050 ft. in another. Approximate depth was 3,015 ft. in the Basal Quartz.

The other oil discovery—Dynamic-Western No. 8 lsd 11-17-21-9w4—recovered 2,180 ft. of gassy oil on test of the Detrital at 3,250 ft.

Dynamic Petroleum was operator for seven of the successes and Western Leaseholds was operator of the other two.

Each of the companies holds a 50% interest in the wells.

Dynamic earned its 50% interest as a result of a farmout agreement with Western.

Under terms of the farmout, Western becomes operator of all the wells as soon as Dynamic drills and completes the wildcats.

In addition to the more than 70,000 acres farmed out, Western holds 100% interest in 4,000 acres in the Jenner area of the region.

Other companies with current holdings in the region include Canadian Delhi Oil Ltd., Canadian Chieftain Petroleums Ltd., Tidal Petroleum Corp. Ltd., and Kerr-McGee Oil Industries.

Western Leaseholds also has three suspended oil wells in the Jenner acreage.

Two of the wells were completed in February, 1953, and the other in July, 1954.

In addition to the nine wildcat successes by the Dynamic-Western team, Kerr-McGee Oil Industries has completed one gas discovery in three attempts.

Kerr-McGee Halsbury No. 6-18, lsd 6-18-22-8w4, was completed in the Glauconitic zone at 3,106-56 ft. On production tests, the discovery flowed at the rate of 6.9-million cf/d of gas on open flow, and 1.8-million cf/d through ¼-in. choke.

The company had one abandonment 1 mi. south of the success, and the other 2 mi. northeast of the completion.

Kerr-McGee has gas license No. 87, covering 30,880 acres. It has no definite drilling plans at this moment. A Kerr-McGee spokesman said the company has utilized subsurface mapping, but no seismic work in the area. A Dynamic spokesman said subsurface

geologic work was the method used by that company.

Dynamic and Western plan five more tests this year.

For the time being, says Archie P. Newall, Jr., Dynamic president, the company probably will drill one gas well to every three or four sections, with the next two or three to be drilled down the eastern side of the block.

Newall adds that on completion of current negotiations for sale of the gas, it will drill further supply wells on the block, which lies immediately north of the Alberta Gas Trunk Transmission line.

Dynamic has not yet used the term "development" with respect to its plans for drilling. "Virtually every well is a wildcat," says Newall, "because there is no continuity of sands."

He reports that average cost of the tests drilled in the block is about $42,000, with drilling and completion time taking about one week. "It could be faster if we were not wildcatting," adds Newall.

Though no estimates of anticipated reserves have been released, it's been indicated that Dynamic is thinking in terms of 500-billion cu.ft. for the 73,000-acre block.

There has been no indication of what the company may expect in the way of oil reserves.

Frac Unit Is Powered by Gas Turbine

A gas turbine is being used to power a Western Co. oil well fracturing unit.

The company's Jet Fracmaster 1200 will be unveiled next week at the 1960 Permian Basin Oil Show, at Odessa, Tex.

All components of the fracturing unit, which took four years to develop, were specially engineered by Western and its suppliers for this application of gas turbine power to oil well fracturing.

Field tests are scheduled in West Texas soon after the show. The unit will first be returned to Houston for installation of electronic controls.

Halliburton Co. also is testing a gas-turbine-power fracturing unit (PW—Jul.1'60,p21). Halliburton is using a General Electric Model 720 engine—a 300-lb., 900-hp. commercial version of a helicopter powerplant. The Model 720 is an axial-flow engine that uses the free-turbine principle.

Laboratory tests under simulated field conditions were completed at Halliburton's Duncan (Okla.) technical center. The unit will be tested for several months in field service on a fracturing truck, serving as the power source for one of the unit's two pumps.

The Halliburton unit also is scheduled to be exhibited at the Odessa show.

JET FRACMASTER 1200 fracturing unit is powered by a gas turbine. The unit, developed by The Western Co., will be shown next week at the Permian Basin Oil Show.

The split-shaft gas turbine being used by Western Co. was developed by Solar Aircraft Co. and is rated at 1,250 hp.

Western Gear Co. designed a special four-speed transmission for the gas turbine, designated the Saturn T-1000.

To get the higher horsepower and reduced weight, Western requested a split-shaft turbine—the first split-shaft gas turbine Solar has made. This permits varying the speed of the pump without affecting the horsepower output of the engine. It also acts as an infinitely variable-speed fluid drive.

One shaft at 750 hp. drives the compressor; the other, at 1,250 hp., drives the load. Everything is coupled directly. And because of the free-turning split shaft, clutches are eliminated.

The single-acting, triplex, high-capacity fracturing pump, the RB-100, is a big brother to Western's RB-80, which has been on the market for several years. It is capable of discharging 38 bbl. of fluid per minute, and is geared to the engine by the special Western Gear transmission, which is designed to handle a 6,000-rpm. input and 1,250 hp. The pump has 6¾-in. diameter plungers and a 10-in. stroke. Discharge pressures range up to 6,000 psi., though other pressures can be obtained with other bore sizes.

Engine, transmission, and pump are mounted on a diesel-powered Mack B-61 bobtail truck.

The entire Jet Fracmaster unit, which delivers twice the hydraulic horsepower of conventional units, weighs some 15,000 lb. less than the present 600-hp. diesel-engine units.

The Saturn engine weighs only 1,200 lb. and occupies less than 51 cu. ft. on the truck deck. It is simple in design, starts instantly at temperatures ranging from minus 65F to 130F, and takes a full load in only a few seconds, without warmup.

The Jet Fracmaster 1,200 will be operated in the field by means of a remote-control panel. It will have automatic controls for maximum pressure, with manual override. This will permit operating at maximum injection rate without going over maximum pressure.

Humble Plans Flood With Propane, Water In Neches Field

Secondary recovery—in the form of simultaneous injection of propane-rich gas and water—is being readied for a portion of the Neches field of East Texas.

Humble division of Humble Oil & Refining Co., which will be operator of the proposed unit, currently has landmen in the field seeking royalty-owner approval of unitization. Approval by the various operators in the field has already been obtained.

Neches field, discovered in 1953, spreads across the line between Anderson and Cherokee Counties. Production is from the Woodbine and Sub-Clarksville (Eagle Ford) formations.

Injection will be into the Sub-Clarksville sand reservoir in the field.

The Sub-Clarksville, which is productive mainly on the Anderson County side of the field, is a thin sand partially overlying the much more productive Woodbine sand.

Following its initial development in 1954, Sub-Clarksville production rose to 3,000 b/d in 1955. It since has declined, however, to the point where it currently is producing only 300 b/d.

The injection of propane-rich gas and water is expected to yield an additional 5-million bbl. of oil.

This, says Humble, is about twice as much secondary recovery oil as could be obtained by a conventional waterflood.

Primary recovery from the reservoir has amounted to 3-million bbl.

More than 2-million bbl. of propane—at a cost of $4.5-million—will be injected.

A peak production rate of about 3,000 b/d is expected about 1½ years after injection starts next year.

Humble plans to start as soon as approval can be obtained from royalty owners and the Texas Railroad Commission.

Barring unexpected delays, injection is scheduled to begin during the first half of next year.

The company says it expects production to remain at the 3,000 b/d level for several years, with a subsequent gradual decline.

The Sub-Clarksville is a sandstone with a porosity of 21%.

Accumulation of oil is due to both anticlinal and monoclinal structure. Average net pay thickness is 4 ft.

DETECTOR on pipe sends signal to nearby van where pipe flaws are recorded as . . .

Pipe Is Inspected in the Field

A truck unit for ultrasonic inspection of drill pipe, tubing, and casing in the field will be unveiled next week at the Permian Basin Oil Show in Odessa, Tex.

International Inspection, Inc. (Triple-Eye), a subsidiary of Welex, Inc., says its portable ultrasonic inspection is done by the same means used in refineries (PW—Aug.19'60,p65), but that recording equipment has been added.

An Ultra Chart has been incorporated so that a permanent record is made of the inspection.

The inspection system pinpoints flaws, gauges wall thickness, and detects discontinuities, all of which are permanently recorded in the mobile van.

The Ultra Chart inspection system utilizes a combination electronic thickness gauge and flaw marker.

"This efficient electronic computer," says Triple-Eye, "accurately measures the time interval between the various ultrasonic echos bouncing back from the pipe wall.

"It then converts this information into signals that are recorded on a log as a permanent record.

"The thickness gauge also has a flaw-marking feature that causes the reflections from flaws or discontinuities in the wall to be marked on the log."

Oklahoma Court Vetoes Unit Plan

Oklahoma operators are weighing the impact of the state Supreme Court's reversal of a Corporation Commission order controlling production in the Velma-Sims oil pool.

The court last week reversed the order and remanded the case to the commission for further hearings and a new order.

Ray C. Jones, commission chairman, says this apparently means the commission will have to resume the three-year-old case on an entirely fresh basis.

The court held that the dividing formula was not based upon proper evidence and was unfair to certain holders.

The rejected unitization proposal set up by Skelly Oil Co. called for the combining of production from some wells and the use of gas injection and other secondary recovery methods to obtain remaining oil from the Velma-Sims sand.

Skelly estimated it could recover 250-million bbl. of oil under the unitization plan, nearly four times the 70-million bbl. already recovered.

Phil-Tex Oil Co., one of the leaseholders, objected to the commission order, contending that the Skelly plan would allow production credit to areas in the pool that have no producing wells.

The firm also objected to the methods of measuring reserves through sand thicknesses. The court said it agreed with Phil-Tex only on the factor of sand thicknesses.

Texas Land Board Trims Lease Prices To Stir Activity

The Texas School Land Board has reduced prices for oil and gas leases on state land west of the Pecos River in an effort to stir interest among operators.

The board trimmed the minimum price for leasing to $5 per acre, plus $1 rental per acre per year. The previous minimum bonus was $15 per acre and the minimum annual rental was $3 per acre.

The reduced prices do not apply to any tract within a half-mile of known production.

The one-sixth royalty requirement has been retained.

The action may nip the growing reluctance of operators to lease at present prices.

Jack Giberson, new chief of the Land Office, also noted that private landowners in the area generally receive a bonus of $1 per acre and a rental of the same amount.

The reduction in minimum lease bonuses and rentals was voted after department geologists reported on the adverse effects of present prices on drilling activity.

Land Commissioner Bill Allcorn, Gov. Price Daniel, and Attorney General Will Wilson—members of the School Land Board—all voted for the reduction after hearing the geologists' reports. Allcorn added, "We feel this is an important step in the development of this area for the benefit of the public schools."

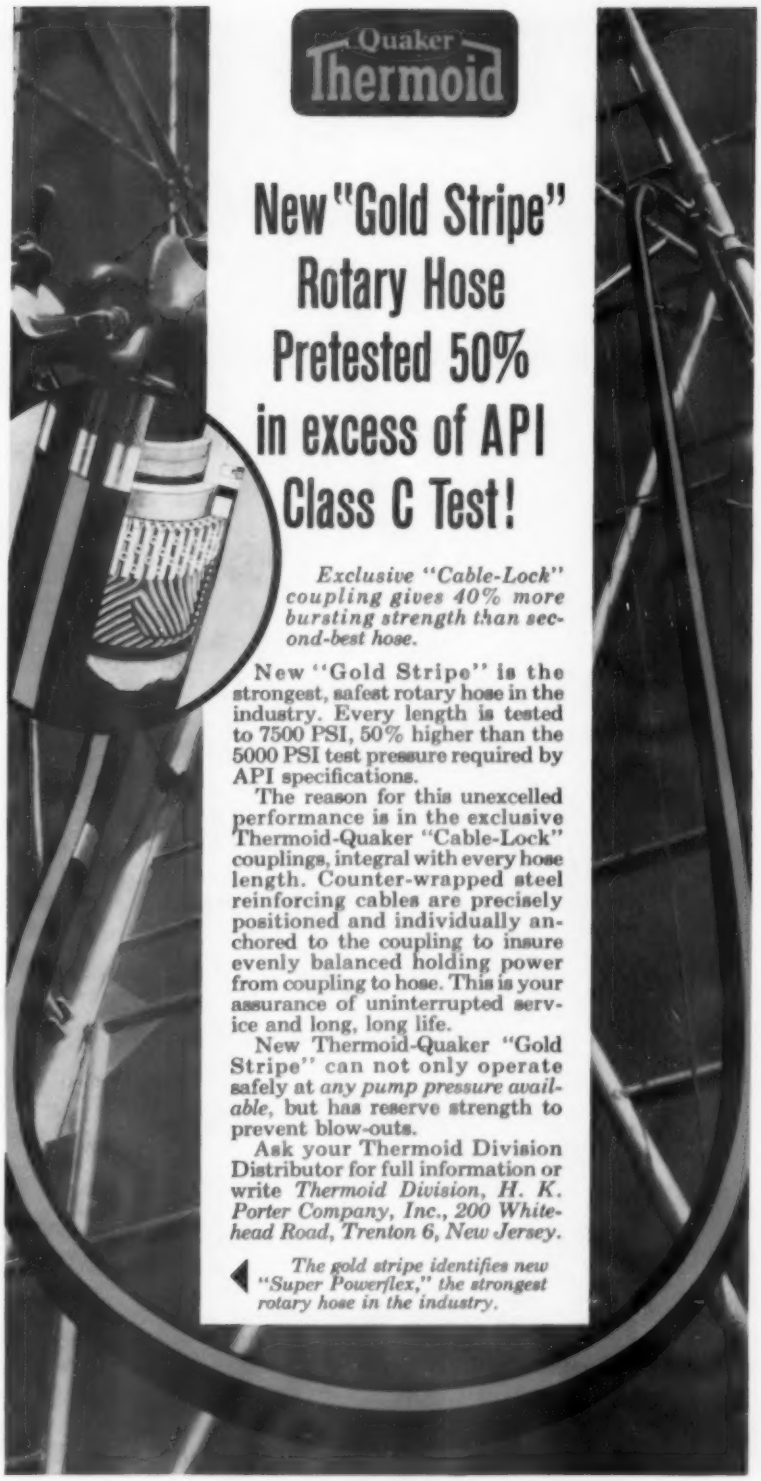
Oil and gas leases in the tidelands, and other acreage east of the Pecos, will continue to carry the old minimum price tags of $15 per acre bonus, $5 annual rental, and one-sixth royalty.

Land Office spokesmen say that interest in deep-water tracts beyond the 3-mi. limit is restricted because of the high cost of such offshore drilling.

They add that the oil industry's present "recession" is being reflected in bidding on state leases.

The board also announced that the next mineral lease sale will be held in Austin Dec. 6, on a sealed-bid basis.

Included in the offering will be tidelands acreage between the 3-mi. and 10½-mi. lines, which the U.S. Supreme Court recognized this year as belonging to Texas, ending the years-long fight by the state to win jurisdiction of the offshore area out to the three-league limit.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The reason for this unexcelled performance is in the exclusive Thermoid-Quaker "Cable-Lock" couplings, integral with every hose length. Counter-wrapped steel reinforcing cables are precisely positioned and individually anchored to the coupling to insure evenly balanced holding power from coupling to hose. This is your assurance of uninterrupted service and long, long life.
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October is Gasoline Tax Reminder Month!

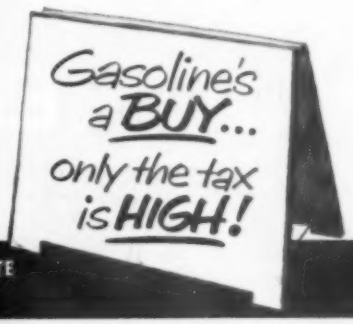
It's the anniversary of the latest temporary Federal gasoline tax increase!

Every oil man and woman should be keenly aware that October is gasoline tax reminder month. October 1, 1959, was the day the temporary 1¢ increase in the Federal gasoline tax went into effect, making the total Federal tax 4¢ a gallon. That's why October is an excellent time for you to remind your friends and business associates about high gasoline taxes. And make sure they know that Congress promised this temporary tax increase would expire on June 30th, 1961 . . . and the Federal tax revert to 3¢ a gallon.

Here are the facts about high gasoline taxes that everyone should know:

- **Motorists pay about one dollar in taxes on every ten gallons of gasoline they buy!**
- **The gasoline tax rate is five times as high as the tax on luxuries like diamonds and mink coats!**
- **Motorists now pay about a 50% sales tax on gasoline!**

So, take advantage of this special gasoline tax reminder month and give your friends the facts about high gasoline taxes.



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Here's one way you can reduce costs and still get the high quality casing you require. Armco Casing, distributed by National Tank Company from 25 stocking points throughout the oil country, actually lowers costs *three ways.*

First, the uniformly high collapse resistance of Armco Casing means you set lighter strings to greater depths.

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Third, field welding costs stay down with Armco Casing. Just stab one end of a joint into the Armco Slip-Joint Collar, make a fast weld, and lower away.

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What's New / IN EXPLORATION, DRILLING, PRODUCTION

Properties Change Hands

Ohio Oil Co. has completed its acquisition of all Kinney-Coastal Oil Co. properties for over $1.6-million, plus a reserved production payment of $7.3-million (PW—Aug.12,60,p16).

The latter payment will cover a period of approximately seven years.

Kinney-Coastal produced about 2,300 b/d—mostly from the Garland pool in the Big Horn basin of Wyoming. It held the pool jointly with Ohio Oil.

Kinney-Coastal is the third company in which Ohio Oil has acquired major interests this year.

Texas American Oil Corp. has purchased working interests averaging 17% in four separate properties in the West Texas-Southeastern New Mexico Permian Basin.

This includes two leases in Eddy County, N.M.—one an 80-acre lease with a producing oil well in the Empire (Abo) pool, and the other a 400-acre lease with two wells in the Camar pool, Schleicher County, Tex., and a 40-acre tract with one completed well in the Watts (Gardner Lime) pool in Nolan County.

Development wells are planned for the properties, which were purchased from J. T. Miller, of Midland, Trustee, for an undisclosed amount. The purchase will add 100,000 bbl. to the company's oil reserves.

Sawyer Petroleum Co. has bought a controlling stock interest in Capital-Seaboard Corp., a Texas oil and gas producing company.

The purchase price for 25% of Capital-Seaboard stock was a combination of 250,000 shares of Sawyer stock, assignment of 15,000 acres of oil and gas leases previously held by Sawyer, and an undisclosed amount of cash. Sawyer will take over active management of the firm.

Capital-Seaboard owns and operates 26 producing oil and gas wells in Jack, Wise, Archer, and Young counties, with proven primary reserves in excess of 2.5-million bbl. It also owns a 2-million-cu.-ft. natural gasoline plant.

Saskatchewan Tower Corp. is buying interests in Hatton gas field, southwestern Saskatchewan.

The company paid over $1.9-million for the interests of Amurex Oil Co.—mostly owned by Murphy Corp.—and $415,117 for the interests of a wholly owned Murphy Corp. subsidiary.

•

Another diversification move: A Dallas-based oil and gas producing company has purchased a steel rolling firm.

Baruch Foster Corp. has bought American Steel Rolling Mills, Inc., Long Beach, Calif., for cash and other considerations. The company said no stock was involved, but the cash amount was not disclosed.

•

A group of Soviet scientists hold that the core of the earth is composed of iron, not ferrous alloys as most scientists believe.

Tass reports that a group at the Academy of Science's Institute of Earth Physics came to this conclusion on the basis of experiments in which iron was compressed by means of shock waves to pressures up to 5-million atmospheres. Pressure is believed to reach 3.5-million atmospheres at the earth's center.

A comparison of experimental results with data on distribution of densities, pressures, and velocities of seismic waves in the core of the earth obtained by geophysical techniques warrants the assumption that the core of the earth is pure iron, according to a scientist at the institute.

•

U.S. Industries, Inc., is consolidating its Axelson Manufacturing Co. and Garrett Oil Tools divisions into one major operation.

The new division, to be headquartered in Longview, Tex., will manufacture, sell, service, and distribute all USI oil and gas production, transmission, and allied equipment to the petroleum industry.

Taylor Milton, president of the Garrett division, will be president of the new Axelson-Garrett division.

The company says the move was "prompted by the similarity of both operations and similarity of the needs of their customers."

•

Oil and gas leases on at least 18 tracts totaling 7,100 acres will be offered by Montana's Office of the Land Commissioner on Nov. 15.

Gas is reportedly produced on two tracts that are to be offered in Fallon County. They total 1,120 acres. Other tracts are in the counties of Liberty, Mussellshell, Wheatland, Pondera, Powder River, and Toole. Largest acreage is in Toole County, where minimum bids have been received on six tracts totaling 2,850 acres.

•

Alaska Schedules Offshore Lease Sale

A total of over 73,000 acres—all tidelands—will be offered at Alaska's third lease sale on Dec. 7.

Bulk of the acreage—26 of 34 tracts—is in the Herendeen Bay area, just southwest of Port Moller, near the tip of the Alaska Peninsula.

Here's a breakdown on the rest of the acreage: 7,018 acres in three tracts near the mouth of Dangerous River, southeast of Yakutat; 5,247 acres in three tracts north of Kanak Island, in Controller Bay, southeast of Katakka; a 1,851.7-acre tract at Kalifonsky Beach on Cook Inlet; 6,476 acres in two tracts on the southeastern side of Kodiak Island, north of Ugak Island; and 5,794 acres in two tracts adjacent to Sitkinak Island at Whirpool Point, south of Kodiak.

All of the tracts to be offered are in tidelands acquired by the state from the federal government following statehood.

Engineering

A lightweight mobile service rig has been developed with special emphasis on bigger, sturdier brakes, increased engine power and load capacity, and combined over-the-road and drive-in stability.

Bucyrus-Erie Co., South Milwaukee, Wis., will display its Model 120-SL next week at the Permian Basin

Oil Show in Odessa. It is designed for well service and rotary workovers to 12,000-ft. depths.

•

Crescent Petroleum Corp. says its new brushless transistorized electric motor has a life expectancy 20 to 100 times longer than a motor with conventional brushes.

Developed by its wholly owned subsidiary, Eastern Air Devices, Inc., the motor is said to completely eliminate brush wear and the usual motor interference with radio and radar transmission.

•

A new foaming agent formulated specifically for air and gas drilling in the presence of salt water is now available.

Afrox-200, a product of the Aquaness Dept. of Atlas Powder Co., will turn even saturated salt water with as much as 10% oil contamination into aerated foam.

•

Drilling Highlights

Wyoming—National Cooperative Refinery Assn. No. 1 Wallace Creek Unit, section 22-34n-87w, Natrona County, flowed oil at the rate of 59 bbl. per hour on drillstem test at 10,333-374 ft. in the Muddy zone of Thermopolis shale. Closest production is 8½ mi. north at Cooper Reservoir where gas is produced from the Ft. Union formation.

New Mexico—Standard Oil Co. of Texas No. 2 Vacuum Edge Unit, section 4-18s-35e, Lea County, flowed oil at the rate of 710 b/d on drillstem test at 8,541-650 ft. in the Abo. The prospect has yielded Abo oil flows ranging from 504 b/d to 840 b/d on four previous tests starting at 8,273 ft. It is 11½ mi. east of Abo production in the Corbin pool.

North Dakota—Great Plains Royalty and Jack Rouse No. 1 Gudvagen, section 18-159n-95w, Williams County, flowed oil at the rate of 23 bbl. per hour through perforations at 8,067-73 ft. in the Nesson. The prospect is 2 mi. north of McGregor field.

Oklahoma—Herman Brown No. 1 Kunkler, section 24-9n-1w, Cleveland County, recovered 3,700 ft. of oil on 20-min. drillstem test at 6,746-58 ft. in the Second Wilcox sand. The test is 2 mi. east of East Falls field.

Utah—Shamrock Oil & Gas No. 1 Rock House Unit, section 10-11s-23e, Uintah County, flowed gas at the rate of 12.8-million cf/d through 1-in. choke and perforations at 4,144-66 ft. in the Wasatch. The wildcat is 5½ mi. south of Southman Canyon field.

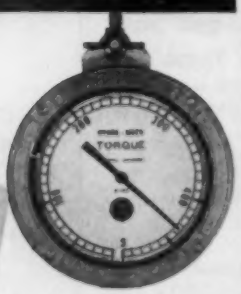
West Texas—Sun Oil Co. No. 1 J. H. Hodge, section 7, block C3, public school land survey, Pecos County, was completed as an oil pay opener in the Waha gas field for 439 b/d of 37-gravity crude through 18/64-in. choke and perforations at 4,916-25 ft., 4,952-56 ft., and 5,028-54 ft. in the Delaware.

South Louisiana—Placid Oil Co. No. 2-B La Terre Co., section 13-20s-17e, Terrebonne Parish, flowed 3.6-million cf/d of gas and 168 b/d of condensate through perforations at 16,029-39 ft. in the Miocene. The discovery is 2 mi. northwest of Lapeyrouse field.

North Texas—McCommons Oil Co. No. 1 Donald, Robert Criedbring survey, Montague County, was completed for 216 b/d of 41-gravity oil through ¼-in. choke and perforations at 6,219-24 ft. in a Pennsylvanian Conglomerate section.

ROTARY TORQUE

for DOWN HOLE VISION



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OUTSIDE DIMENSIONS HAVE BEEN TRIMMED DOWN to give you extra inches of clearance for parking and garaging, yet there's a full measure of Chevy roominess on the inside. **DOOR OPENINGS ARE UP TO HALF A FOOT WIDER** for easier entry and exit—a boon to any busy fleet schedule. **NEW EASY-CHAIR SEATS** are up to 14% higher—just right for sitting, just right for seeing—yet there's more head room in most models. There's **MORE LEG ROOM** in the front, more foot room in the back. And there's a **NEW BUILT-FOR-BUSINESS DEEP-WELL TRUNK** that opens at bumper level for easy short-lift loading. These are just a few of the unique benefits that make Chevy for '61 the one car that meets all your fleet needs so perfectly it might just as well have been custom built to your specifications. And that's just as true whether you rent, lease or operate your own fleet. Talk it over with your Chevrolet dealer first chance you get. . . . Chevrolet Division of General Motors, Detroit 2, Michigan.

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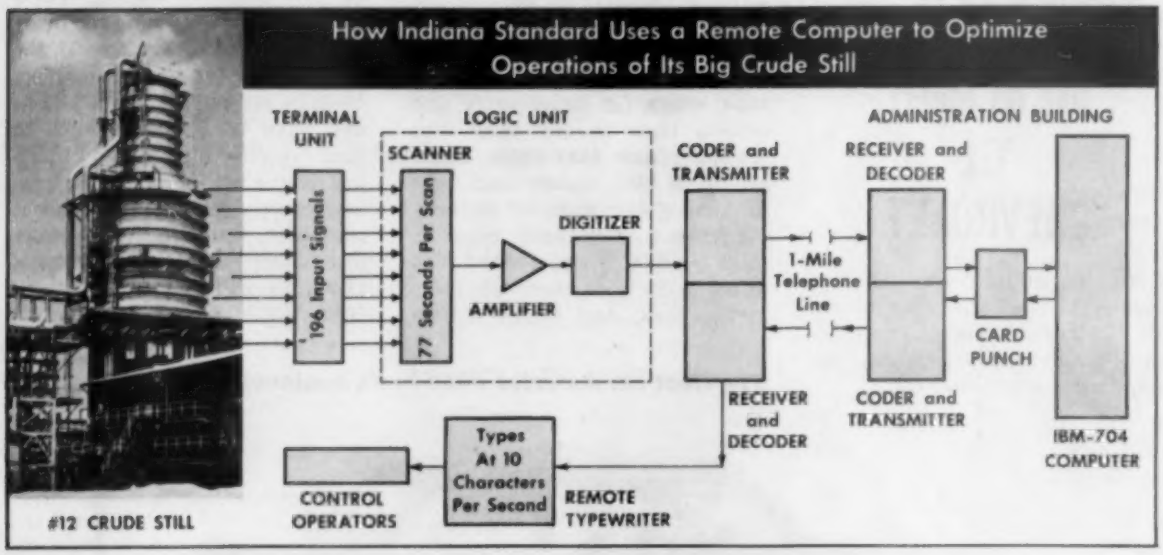


Computer Control Nears for Big Still

Automatic control by means of an electronic computer of the country's largest crude still may soon become a reality at the Whiting refinery of Standard Oil Co. (Ind.).

The progress of the work carried out by chemical and control engineers for the past two years, and the simulation studies that will lead to eventual "closed loop" control, were revealed at Whiting this week.

For the time being however, an IBM 704 computer is being used only to "optimize" the operation of Whiting's 140,000 b/d No. 12 crude still.

Some 90,000 b/d are produced as overhead and sidestream products in the unit's primary tower, and 50,000 b/d go from that tower to the unit's vacuum tower.

Operating signals from 196 instruments installed at strategic points on the unit—to record temperatures, pressures, and flows—are transmitted to the IBM 704, which is located in the Administration Building, 1 mi. from the plant. The results of the computer's calculations are sent back to the unit's control room, and used by the operators to readjust the unit for optimum operation.

This optimization is done only intermittently; the 704 computer is used for other engineering problems the balance of the time.

An IBM 704 computer is a pretty large unit—larger, in fact than would be necessary to supervise and control the No. 12 still. Therefore, when the control application does not demand attention, the computer proceeds with other scientific assignments at Whiting's extensive technical center.

When the still finally goes on full computer control, the size of computer needed will be selected from the many types available at the Whiting refinery.

What is mostly required for such a control operation is a great deal of "memory capacity." This can be achieved by using a computer smaller

Russians Lag in Computer Control

The Russians do not have, as of today, any unit under automatic computer control in their refineries or chemical processing plants.

This was revealed at a symposium on Russian instrumentation technology at the recent meeting of the Instrument Society of America, in New York.

The panel consisted of eight instrument and electronics experts who had attended the conference of the International Federation of Automatic Control in Moscow, in July.

However the Soviets are making an enormous effort in the field of automatic control, John J. Troxel, professor of electronics at Brooklyn Polytechnic Institute, pointed out.

The visitors were impressed with the progress made by the Russians in the field of automation. They seem to know everything that we do in the U.S., Troxel said, some of it much better than we do ourselves, and they also know more about what is going on in Russia: Interchange of information among Russian laboratories is the rule.

The principal difference between the Russian and U.S. technicians in this field is that the Russians invariably proceed from abstract generalities to specific cases, while we prefer to go from the specific to the general, remarked John Mozley, professor at John Hopkins University.

The Russians will not start doing any practical application of their work until they have developed a satisfactory theory; we in the U.S., Mozley said, would rather apply a new technique to a relatively simple practical case, then develop a theory for it and apply it to increasingly complex cases.

than an IBM 704 and accessory "storage" equipment, located outside of the computer.

Reasons why the company's efforts are concentrated on the optimization of a crude still is that such a unit performs the most basic, large-volume operation in any refinery.

The distillation unit, the company says, offers the best computer control possibilities for several reasons:

- It involves a large dollar value of products, therefore a fast payoff.
- It is subject to frequent, significant, and uncontrollable variations —crude quality, for example.
- It is also subject to a large number of "constraints," or requirements—such as product quality, vapor pressure, or heat loads.

The development work now under way is being carried out in close cooperation between Indiana Standard and International Business Machines Corp.

Actually, a much larger group is contributing its knowledge and its experience to the project. This group consists of all the present users of IBM 704-type computers, who, as part of an IBM-sponsored organization, have agreed to exchange data and information of a nonproprietary nature.

Preliminary studies by the joint Indiana-IBM research team were conducted on another, smaller still, at Whiting.

The work started in July, 1958, on a 60,000 b/d pipestill, and an IBM 650 was used for processing the data. The study convinced Indiana of the advisability of computer optimization: It showed that in the conventional control of the unit, the operators were clearly missing a great number of control opportunities.

Computer-control trials of this smaller unit convinced the company that substantial improvements could be effected with the help of a computer on the large No. 12 still that went on stream in May, 1959.

With modern instrumentation technique, Soind says, operators are able to make highly acceptable products at reasonable throughputs. There is no assurance, however, that the plant is running at highest yields of the more valuable products, or with the most efficient use of fuel.

Conventional instruments can control only one variable, according to some relatively simple objective. For example, a temperature can be controlled at a constant value, or a flow regulated at a constant ratio to another flow.

Three types of operating variables are considered pertinent to control:

- Primary, or independent, variables. Only 19 out of nearly 100 such variables in Indiana's No. 12 still can be controlled manually by the operators. But the fluctuations of many of the other, uncontrolled, variables—including, for example, atmospheric conditions or crude quality—are an important justification of computer control.
- Constrained variables. These result from changes in required product quality, or from equipment limitations. Out of 160 of these variables, Soind says, 54 are important to control.
- Economic variables, including such items as prices, costs, and quantities of raw materials, products, and utilities.

The control concept consists of two phases: an accurate diagnosis of current operating conditions, and an optimization phase that leads to readjustments of controller set points.

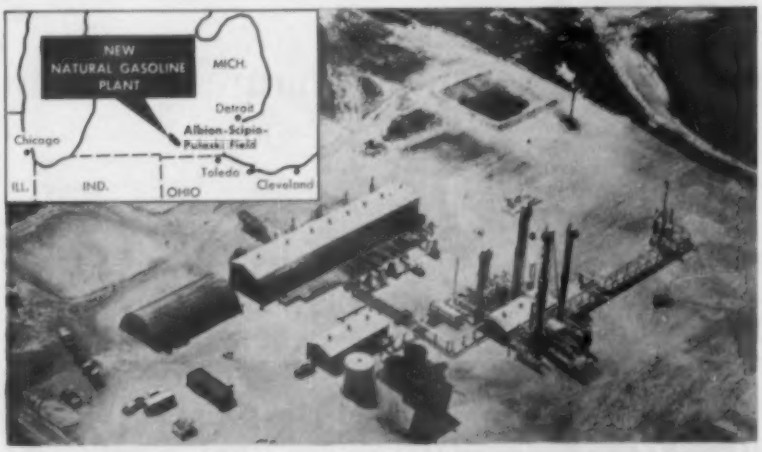
Under the present setup at the No. 12 still, all the process data, in analog form, is scanned in 77 seconds from the 196 input instruments. A solid-state logic unit amplifies these signals, converts them to digital form, passes them on to an input-output unit where they are encoded for transmittal to the IBM 704 room.

The computer has capacity to handle 20,000 instructions. Using linear programming technique, the computer optimizes 54 of 161 equations, to determine the best settings for up to 19 independent variables that are manually controlled by the operators.

The scanning process may be initiated in several ways: Two of them use card punch units, one with a button and one with an interval timer; there is also a scan button on the input-output unit; or the computer may be programmed to initiate a scan at desired time intervals.

Once full automatic computer control of the No. 12 still is achieved—probably in 1961—further units will likely be subjected to control by computers, Indiana Standard says.

Studies are already under way to put Whiting's Ultraformer—a catalytic reforming process—under computer control. And after that, the more complex processes of catalytic cracking and alkylation are likely prospects, according to the company.



Michigan's First Natural Gasoline Plant

The first natural gasoline processing plant in the heart of a major market area east of the Rockies is now on stream in southern Michigan.

The plant is in the Albion-Scipio-Pulaski oil and gas field, close to Detroit, Toledo, Chicago, and Cleveland. It is owned 65% by Ohio Oil Co. and 35% by Humble Oil & Refining Co.'s Carter division.

The plant is presently processing 20-million cf/d of gas, and produces specification propane, plus butane and natural gasoline in mixed form. The plant provides Consumers Power Co. of Michigan with about 14-million cf/d of dry gas.

Present capacity is 25-million cf/d, but it will be expanded in the near future, Ohio Oil says.

Thermal Diffusion Improves Lube Quality

A new method for separating high-viscosity-index lubricant from a mixed base-stock feed is being developed by Standard Oil Co. (Ohio). It is based on "thermal diffusion."

How Sohio is making use of this principle was described at the recent meeting of the American Institute of Chemical Engineers, in Tulsa, by Dr. Robert Grasselli and Glenn R. Brown, of Sohio, and Chas. E. Plymall, now with Owens Illinois Glass Co.

Thermal-diffusion separation makes use of the fact that a separation occurs when a solution is held in a container having one cold and one hot side. The molecular concentration increases along the hot side, and decreases along the cold side.

When the container is vertical, convection streams rise along the hot wall, so that the concentrated product can be collected at the top; conversely a stream of low-concentration product falls along the cold well and can be collected at the bottom.

The principle of thermal diffusion was applied during World War II in the atom-bomb project to separate U^{235} from the far more common U^{238}.

When the product contained in the space between the walls is a complex lubricating oil mixture, the material having the highest viscosity index collects at the top.

Dr. A. L. Jones, of Sohio, discovered a few years ago how the principle could be applied to improvement of lubricants. Oils having a viscosity index as high as 150 can be produced without the use of additives, Sohio says.

The prototype unit consists of a bundle of ten vertical tubes, 34 ft. high, housed in a steel shell.

Each tube contains another concentric tube, with an annular space 0.048 in. wide between the two tubes. The separation process occurs in the annular space.

Steam is admitted to the top of the shell, and heats the outside tubes to a temperature of about 460F. An upward flow of cold water is forced through the inside tubes, maintaining their wall temperature at 150F.

The relative location of the feedstock entrance and of the separated lube oil takeoff points is very important, Sohio says. For example, the feedstock may enter a plenum chamber about half way up the column, and the high V.I. and low V.I. products will come out of collectors located at the top and the bottom of the bundles, respectively.

In the present prototype installation however, the feedstock enters the apparatus at both the top and the bottom. The separated finished products are taken off out of the same collectors, but on the opposite side of the tube bundle. Oddly enough, there is no excessive remixing between the feedstock and the finished products, Dr. Grasselli told PETROLEUM WEEK.

This particular arrangement is designated as "mixed-and-feed columns with transverse flow," and Sohio has found that its separating efficiency may be as much as 40% higher than with a "center feed" arrangement.

Most effective arrangement, Sohio says, is when ten successive bundles, with 96 tubes per bundle, are interconnected, then separation takes place both vertically and transversely throughout the system.

The prototype unit was built by Griscom Russell Co., Massillon, Ohio, specialists in heat exchangers.

It is expected that a plant capable of yielding up to 3,300 gal. a day of 120 V.I. oil would cost approximately $110,000.

Such a plant would consist of ten 96-tube bundles, 34 ft. high. With a cold wall temperature of 150F, the hot wall temperature could be varied between 460F and 600F, and the heat consumption would vary from 770,000 BTU per gal. with the lower hot wall temperature, to as little as 400,000 BTU per gal. with the high wall temperaure.

The principal cost item is not the capital investment, but the relatively high heat cost, Sohio says.

In the present prototype unit, steam from a gas-fired boiler is used and recycled to the boiler. But a less costly method of heating the hot wall must be developed before the system becomes really practical.

Chameleon Paints Spot Heat Shifts

Paints that change color when subjected to a specific temperature are being used more and more as warning signals in refineries and in processing plants.

The principle is old; it was applied in Europe over 50 years ago. But relatively little use has been made of these "heat-warning paints" until recently.

Now they are getting increasingly popular. Several refiners—for example, Humble Oil & Refining Co. and Socony Mobil Oil Co.—prepare their own color-changing paints.

The Princeton (N.J.) division of Curtiss-Wright Corp. makes both crayons (Thermocroms) for use in laboratories and on relatively small surfaces, and paints (DetectoTemp) for application on large surfaces.

And Tempil Corp., New York, makes crayons and coatings that melt at specified temperatures.

One or several changes of temperature can be detected according to the type of paint used.

Standard Oil Co. of California, at its Perth Amboy (N.J.) refinery, is currently evaluating, on one of its Platformer reactors, a white paint that turns brown at 644F. No special preparation of the surface was required beyond a simple steel brushing, and no primer was used. The warning paint is

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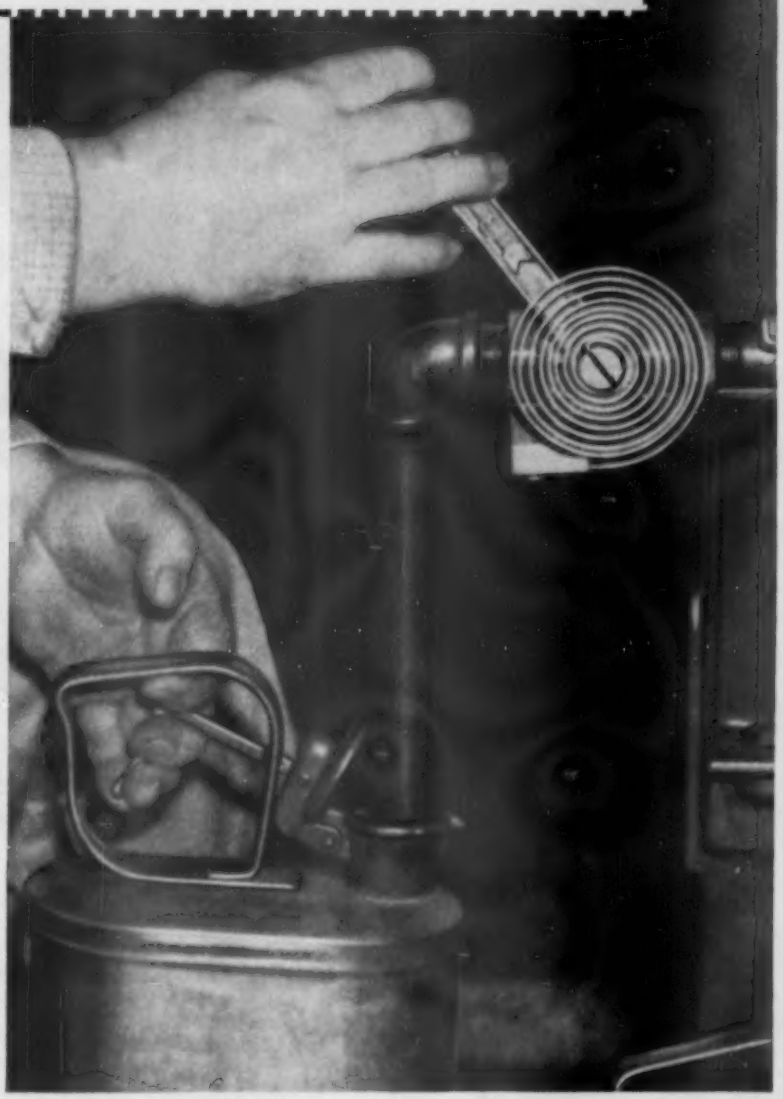

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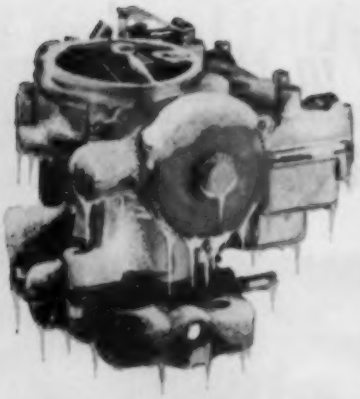

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CHEMURGY DIVISION
Central Soya Co., Inc.
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covered with a coat of silicone lacquer.

Humble is using its paints on the cat cracking units of its Baytown (Tex.) refinery. They are special silicone and acrylic resin formulations, blue or green, that change to white at various temperatures between 585F and 750F.

Chemical combinations of different types will change color as many as four times as the temperature rises, and some will revert to their original color when the temperature decreases.

Such "chameleon" paints have many advantages.

For example, complicated and costly temperature-measuring equipment need not be used; areas difficult to reach can be kept under observation uninterruptedly; and color changes can be seen from a distance.

In addition, manufacturers say that these paints have good protective qualities and good corrosion resistance.

What's New / IN PROCESSING

A 7,500 b/d isocracker, using a new California Research Corp. process, will be built at the Standard Oil Co. (Ohio) refinery in Toledo.

Sohio was granted the first license to use the Cal Research process, which converts gas oil to gasoline with yields as high as 110 volume per cent. The isocracker at Toledo will convert straight-run and cracked gas oils to gasoline.

•

Phenol will be produced from a cumene oxidation process at a plant Monsanto Chemical Co. will erect at Texas City, Tex. Capacity will be 50-million to 75-million lb. per year.

The new facility, slated for completion in the spring of 1962, will raise Monsanto's total capacity for phenol to over 200-million lb. The company operates two other plants for phenol production.

•

Capacity of the Delaware naphthalene plant being built by Tidewater Oil Co. and Collier Carbon & Chemical Co. has been doubled. It is now scheduled to be 100-million lb. per year.

The two companies are also constructing a naphthalene plant in the Los Angeles area, with 50-million lb. per year capacity.

•

British Petroleum Co. and California Chemical Co. have entered into a $19.6-million joint venture for the construction of two aromatics plants in Europe. California Chemical is a subsidiary of Standard Oil Co. of California.

The units will be operated by British Petroleum for the newly formed BP California. Location will be adjacent to BP refineries in Kent, England, and Dinslaken, West Germany.

Initial capacity of the units will be 19,000 tons a year of orthoxylene, 16,000 tons of ethyl benzene, and 22,000 tons of paraxylene. First production is scheduled for late 1961.

•

Two new Ethyl Corp. additives are available: a mild extreme-pressure additive for lubricating oil, and a fuel additive to counteract the harmful effects of copper.

Ethyl Antioxidant ZDP in lubricating oil protects engines against cam and lifter wear; Ethyl Metal Deactivator, which is a chelating agent, is added to gasoline to nullify the tendency of copper particles to promote oxidation of the fuel.

•

A new application of fluorocarbon wax produces a dry-film and antistick agent.

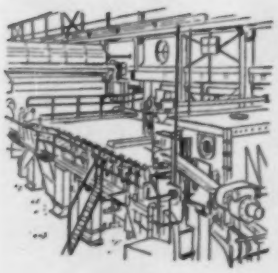
Rulon, recently introduced by Dixon Corp., Bristol, R. I., is made from Du Pont's Dispersion Fluorocarbon Wax in an aerosol spray. It has many industrial applications as a lubricant for belts, gaskets, and machine parts, and as a surface film on wood, metal, leather, and plastics.

•

The first carbon black production on the Pacific Coast will come from a plant United Carbon Co. will build in Southern California.

Initial capacity of the facility will be 64-million lb.; completion is slated for 1961.

there's more to Cities Service than meets the eye!



It takes giant machines to turn rags, straw, wood and other fibrous materials into paper. The huge "wet end" of a machine shown above is used in making stretchable papers.

This year our paper industry will produce more than 68 billion pounds of paper. It will take over 200,000 people to manufacture it.

And more than 400,000 people work in paper and allied-products industries to produce the myriad of paper products we use. Yet few of us realize the huge production task involved in manufacturing the paper we need.

And few motorists "filling her up" at their Cities Service station consider the enormous task of producing gasolene. Cities Service searches five continents for oil . . . maintains a pipeline system that can circle the globe . . . operates towering refineries and modern research laboratories. Cities Service has spent over a billion dollars so far in building and maintaining this vast network of facilities.

Only in this way can America have what it needs for progress —more jobs and more and better oil products.

What Will Replace the Lube Job?

Dealers need more help in evaluating and adjusting to the new lubrication trends than anything else. This is the consensus of more than 2,700 oil marketers who are responsible for sales at half the nation's stations.

A survey released this week points up the concern of these marketers for improved preparation for dealers in an area that has recently become vulnerable, and more complicated. The replacement of conventional lube points with the so-called greaseless bearings in many of today's cars (PW —Sep.9'60,p44) has apparently caused marketers to doubt the ability of their dealers to service these innovations. (The bearings require periodic inspection, even if they don't need repacking.)

These findings were brought to light in a survey conducted by Washburn & Co., a firm that has designed training aids for several major companies.

The enhanced need for lubrication instruction is linked with the search by marketers for some other source of service income for their dealers.

One executive who saw preliminary results of the survey concludes that marketers "are worried about what's going to take its [the lube job's] place as an income producer, what with the 30,000-mi. sealed lube points and all." As a result, he says, "We'll have to stress safety services or over-1,000-mi. preventive maintenance to keep them coming back."

But other marketers in the past have not been satisfied with this answer. They have warned that safety has never been popular with motorists, and to base a service campaign on it could be fruitless. Ford in 1956, they point out, based its whole merchandising effort on safety, even offering to install seat belts at cost. But the program fell flat: Only 1% of the seat-belt buyers continued to use them by 1958, a survey showed.

As a substitute for the lube job, marketers appear to favor increased selling on the drive, and emphasis on tires, motor oil, oil filters, and batteries.

These categories were all ranked among the top ten most important training areas by the 2,767 executives who participated in the survey.

Significantly, the more complicated repair jobs—which recently have received more attention by dealer trainers—were placed much farther down the list.

Tune-up, wheel balancing, brake adjustment, and transmission service were downgraded to between 11th and 20th in the survey returns.

Mufflers, which in the past year or more have become a lucrative service station sideline, ranked 34th in importance with the marketers.

And the new permanent antifreezes, (which are supposed to step up dealer profits, according to their manufacturers) ranked only 36th with oil marketers.

There is some doubt, of course, that dealers themselves would choose to downgrade these topics. As one marketer told PETROLEUM WEEK last week, there is a potential conflict between dealers and suppliers on what will take the place of lube jobs when cars are all greased for life.

Dealers, he said, have shown a tendency to turn to other maintenance work, and have, in general, failed to show enthusiasm for driveway selling.

Financial management is considered by the nation's marketers to be the most important nonservice topic in dealer training programs.

It ranked fifth in the survey. One executive went so far as to say that "I wouldn't rate financial management behind anything." Special services such as changing oil filters and automatic transmission repair he called "frosting on the cake."

Other aspects of station management that ranked high with the surveyed marketers included credit handling, inventory control, and the profitable use of employees.

These topics, which suggest the suppliers' concern over the way dealers utilize their resources, all ranked in the top 23 of Washburn's survey, which included 44 subjects. Less stress was given to station maintenance, pricing, and safety.

In salesmanship and merchandising, the marketers felt that making customers come back ranked second to selling on the drive in importance. This, it was suggested, reflected the waning influence of brand loyalty on motorists.

Apparently less important to the

Indiana Standard Doffs Crown to New Pump

Standard Oil Co. (Ind.) has abandoned its ornate crown-top pumps for these new two-headed units at this station in St. Louis, Mo.

The pumps were designed by Wayne Pump Co., especially for Standard. The units dispense both premium and regular gasoline through the same hose. To switch from one grade to another, an attendant adjusts an automatic selector knob.

The pumps can be converted to blending units without adding accessory equipment.

dealer, the marketers felt, were improved advertising techniques. Building displays that sell was a topic that ranked 25th in the over-all tabulation, while local advertising planning and direct mail campaigns were placed below 40 in the total ratings.

Payola Hits Toronto Heating Oil Market

The uncontrolled spread of payola is demoralizing fuel oil marketers in Toronto, Canada. Distributors find themselves forced to pay $10 to $15 to compete for new accounts.

The go-betweens in this payola boom are real estate agents and home-heating contractors who act as bird dogs for fuel oil distributors. Most of the Canadian refiners have been vying for their services, too.

An official for one major oil company admits that "We have a few 'free' accounts in our fuel oil business. But most of them cost us $15 apiece."

A sales manager for another major refiner reveals that his company offers $10 for new accounts.

"It's nothing but a big racket" is the way one distributor sums it up. "We can't afford to pay for it."

Another distributor offers a standard comment: "It's a club being used by major oil companies to knock us out of business."

Whatever the origin of fuel oil payola, it is understandably difficult for distributors to keep pace with it. The minimum $10 price for a new home-heating customer may amount to a year's net profit on the account.

The situation has become so bad that customers themselves are demanding: "What have you got to offer, if I give you my fuel business?"

Oil company agents find that they have to split their commissions with new accounts. For example, they may give new customers $5 out of the $10 or $15 they earn for releasing their names to a supplier.

This has an aggravating effect on the payola system. To compensate for their reduced commissions, the agents try to switch accounts from one supplier to another every year—even every six months.

Fuel oil customers find themselves besieged by commission agents eager to increase their "finder's fees." One credit-card customer told British American Oil Co. that he had six calls from door-to-door fuel oil representatives.

What's New / IN MARKETING

The Operations & Engineering Committee of API's Division of Marketing is attempting to placate local prejudices against service stations by inviting city planners to address them.

Last week, Allen Fonoroff, of the Cleveland City Planning Commission (the first of such speakers), told the O & E marketers that service stations present "special land use problems" that justify regulations limiting their number. But he called for standards to avoid "arbitrary and unreasonable" regulations.

Other O & E items:

- The committee voted to study bottom unloading of oil products shipped in tank cars.
- The committee learned that the International Conference of Building Officials (ICBO) had adopted API recommendations in its model sign code.
- Both Underwriters' Laboratories and the Gasoline Pump Manufacturers Assn. are studying the elimination of nozzles on new gasoline pump shipments, the committee was told. (The nozzles are often returned by dealers who substitute their own.)
- The National Fire Protection Assn. has delegated to committees the study of a proposal to eliminate the static wire from gasoline pumps, O & E learned. (The wire is considered unnecessary by marketers.)
- The committee revealed that API is publishing a manual on the standardization of pump bases and on the abandonment of underground storage tanks.

•

Delta Refining Co., an independent refiner based in Memphis, Tenn., may soon expand into marketing.

The company is currently making a study of potential markets, and expects to launch its program in early 1961, probably under the Delta brand.

Up to now, Delta has relied primarily on private-brand jobbers for outlets for its 12,000 b/d plant.

•

Oil marketers are slowly advancing toward the creation of a unified oil-heat organization. A proposed constitution and bylaws may be ready for study by future members as early as next month.

A four-man task force will meet on Oct. 15 to work out the details. Oil heat marketers in the Northwest are reportedly willing to study them, despite their avowed reluctance to join the organization.

This organization is intended to bring together the refiners of the National Fueloil Council, the members of Oil Heat Institute of America, and the research operation of API's Fuel Oil Committee.

•

The service station "is destined to become a major retailer of nonautomotive lines," according to E. B. Weiss, director of merchandising at Doyle, Dane, Berbach.

In a forecast of major retailing trends during 1961 to 1965, Weiss declares that by the end of this period some 50,000 service stations will become major outlets for nonautomotive products.

The rest of the nation's stations will also advance toward diversification in these products, he said.

One way in which service stations may ease into the non-automotive field is through greater use of vending machines. Weiss foresees explosive growth of these machines by 1965.

Weiss' predictions are contained in a recently released booklet entitled "Planning Merchandising Strategy for 1961-1965."

•

Motor-fuel consumption will total 63.8-billion gal. in the U.S. this year, the Bureau of Public Roads predicts. This is a gain of 3.5% over 1959.

Practically all of this increase will be accounted for by the increase in motor vehicle registrations, which, the bureau forecasts, will rise by 3.3% this year.

The expected annual rate of fuel consumption on highways this year is 790 gal. per vehicle. This compares to 788 gal. per vehicle in 1959.

•

The national weighted average octane level of regular gasoline declined 0.1-octane last month, while premium remained unchanged.

Compared to September, 1959, regular showed a 0.4-octane increase, and premium was up 0.1-octane.

5 LEADING REGIONAL OIL AMERICA'S LEADING

To serve you better coast-to-coast, 5 leading regional oil companies have joined hands to form a new Humble Oil & Refining Company. The name comes from an oil field and a town near Houston, which was the origin of Humble Oil Company almost 50 years ago.

In the fast developing Age of Energy, this is an important move. It joins the skills and resources of all these companies into a single closely-knit organization that now markets products coast-to-coast.

The new Humble is America's Leading Energy Company. It finds, refines, distributes, and markets more natural gas, oil and petroleum products for America's growing needs, than any other domestic oil operation. It is backed by the leading petroleum research laboratories in the nation . . . with more oil and petrochemical advances to their credit than any other U.S. Research group. This new organization under Humble Management offers opportunities for greater efficiencies in oil exploration, drilling, production, transportation and marketing.

The new Humble Oil & Refining Company looks forward to expansion in two important areas.

Geographical expansion – as a marketer with more than 30,000 service stations, now enabled through this move to operate in all 50 states.

New product expansion – not only in improved fuels and lubricants, like the remarkable new Uniflo Motor Oil, but also in the exciting new field of petro-chemistry where hundreds of new and useful products have been improved or developed because of Humble research.

COMPANIES UNITE TO FORM ENERGY COMPANY

IDENTIFIED COAST-TO-COAST BY THESE FINE TRADE MARKS

HUMBLE
OIL & REFINING COMPANY

Mattei Says Iran Well Is Commercial

Italy's Enrico Mattei is now on record as convinced that his ENI group's first Persian Gulf wildcat has found commercial production (PW—Sep.2'60,p32).

Despite many reports, sometimes conflicting, about the Italians' wildcat "discovery" in Iran's waters (map), no official statements about its commercial prospects had ever been made, until last week.

Mattei told Petroleum Week the wildcat in Iran's waters will be capable of producing 500 metric tons a day (about 3,500 b/d).

In an exclusive interview in Milan, Mattei also said there were prospects that its production potential could be increased beyond that level.

Though Mattei gave no particulars, it is known that the well produced 93 barrels hourly in tests of

the Asmari limestone at 6,927-7,380 ft., indicating that there is a potential of some 2,230 b/d from that formation.

The well is currently shut in awaiting further tests of a lower horizon, in the Cretaceous, which is expected to yield some additional production with acidization.

The wildcat was carried to 11,011 ft. and plugged back to 10,666 ft. after an unsuccessful fishing job. Tests of Ammonite shales at the bottom of the hole yielded salt water.

Meanwhile, Pan American International—another newcomer to Iran—may also be close to proving its first commercial production in the Persian Gulf, on an adjoining offshore tract.

Production tests are currently being run in Pan American's initial wildcat on the acreage.

There have been some reports of test rates around 3,000 b/d, but the company itself isn't talking about its test results. The wildcat was carried to total depth of 13,151 ft., with several oil and gas shows encountered.

Pan American also is drilling ahead

Cuba Was Free Market, Esso Says

Esso took a slap at Fidel Castro's "monopoly" charges last week, claiming that oil marketing in Cuba before expropriation was actually "highly competitive."

The declaration came in a document called "Esso in Cuba: 1882 to Expropriation" released without comment by Esso Standard Oil S.A. The paper details the 78-year history of Esso's Cuban operations through last Aug. 6 when its properties and those of three other international oil companies were expropriated by the Castro government.

There were 164 private wholesalers and distributors of oil in Cuba prior to expropriation, Esso said.

Besides Esso, which had just under 50% of the Cuban market, three other majors had stakes in Cuba. Texaco and Shell had refining and marketing operations, while Sinclair was solely a marketer.

Esso also reported its average earnings in Cuba over the past four years were "not over 4% of total investment," due to a $31-million investment in new refining facilities.

The total asset value of the company's property was set at $75-million last April.

Moreover, it said, Esso accounted for about 6% of Cuba's total tax receipts.

Just a month before expropriation, Cuban Esso owed more than $26-million to its overseas suppliers for which it could not get foreign exchange from Cuba, the document stated.

In April, an agreement was made between the company and the government, under which foreign exchange would be made available on a 90-day basis for current shipments. Some $4-million of these payments were defaulted and remained unsatisfied on June 1, the date of intervention, a preliminary step toward full expropriation, the paper said.

The company reported its average weekly wage to Cuban employees, including benefits, "far exceeded the minimum monthly wage established by law."

The Cuban affiliate employed approximately 1,000 persons—all but two of them Cuban. The annual payroll was near $5.5-million.

More Sahara

Last week, without fanfare, the French turned on the tap of a new pipeline that will send an additional 160,000 b/d of Saharan crude to the French market next year.

The 485-mi. line will bring oil from two oil fields in the southeastern Algerian Sahara, near Libya, to an export terminal at the Tunisian port of La Skhirra. The gathering station for the line is at In Amenas, Algeria.

Unlike last year's opening of France's other Sahara pipeline, from the big Hassi Messaoud field, there was no celebration to mark last week's occasion. Tunisia is a supporter of the Algerian Nationalists in their war against the French so both the Paris and Tunis governments considered visits by French officials to Tunisia inopportune at this time.

The new 24-in. line is expected to have handled 8.4-million bbl. by the end of the year, or an average of 68,000 b/d for the period starting in September, when trial runs were begun.

By 1962, two additional fields in the same area are scheduled to go on production boosting throughput to 180-190,000 b/d.

While the present capacity of the line is between 140,000 and 150,000

in its second wildcat on the tract, closer to shore. It has now reached 10,800 ft. after a drillstem test of oil-saturated limestones encountered at around 9,100 ft.

Both ENI and Indiana Standard, Pan American's parent organization, moved into Iran in 1957-58 with an eye to Middle East crude as a base for expansion into integrated international oil operations.

At the time, the Italian state-owned ENI group had only minor interests outside of Italy itself. Since then, ENI has been piling up many stakes, largely in Africa and Europe.

Similarly, Indiana Standard's operations had virtually all been limited to the U.S. since its withdrawal from the Middle East and Venezuela over two decades ago. It reentered both areas primarily for crude for its domestic operations. At the same time, it has also been moving toward lining up refining and marketing interests abroad, and further adding to its foreign exploration.

Protests on Japanese Oil Plan Reach the Diplomatic Level

Protests by Western oil companies over the plan for preferential treatment of Japanese-owned Middle East crude in the Japanese market reached diplomatic levels last week, according to sources in Washington, London, and Tokyo.

The plan—on which Tokyo has not yet made a firm policy decision—involves assigning to all refiners in Japan a prorated share of crude from the Japanese-owned Arabian Oil Co.'s offshore Neutral Zone concession (PW—Oct.7'60,p82).

Western oil companies with interests in Japan have been increasingly unhappy at the prospect of being forced to take the crude, displacing supplies from their own sources—and probably at higher prices, too. The Western companies with refining stakes in Japan are Caltex, Stanvac, Tidewater, and Shell.

U.S. and British officials are "keeping in touch" with Tokyo about the forced-market plan, though neither government has filed a protest.

The British have, however, advised Tokyo that any attempt to force Shell to buy the Japanese-owned Middle East crude would violate Shell's present contractual agreements for Middle East oil for its Japanese operations.

Washington sources indicate that Tokyo is "treading lightly" in the situation. And the Japanese government now hopes to reach agreement with the oil companies before making any firm policy decision, according to its Ministry of International Trade & Industry.

Oil for Sale as Second Pipeline Opens

b/d, it will ultimately be able to handle up to 340,000 b/d.

Only one pumping station has been installed so far, thus setting the present limit. A second station, to be completed in April, will raise capacity to 190,000 b/d. Later on two more stations could be added to bring the figure up to 270,000 b/d. And with four small booster stations, the line could reach the maximum figure.

Inauguration of the pipeline opened the French market to Creps, a French company partly owned by the Shell group, almost five years after its first Sahara discovery, at Edjele in January, 1956.

Shell holds a 35% interest in Creps (Cie. de Recherches et d'Exploitation de Petrole au Sahara). The government's Regie Autonome de Petroles (RAP) owns 51%, and other French government and financial interests the remaining 14%.

The biggest of Creps' fields is Zarzaitine, which has recoverable reserves "beyond a doubt"—in the company's own words—of 595-million bbl.

Zarzaitine is expected to produce oil at any average rate per well of 1,400 b/d. Many of the 70 producers in the field will flow over 3,500 b/d, the company reports. The smallest well so far is good for 426 b/d.

The only zone on production this year in the 31-sq. mi. field is the F4 (Devonian), found between 4,100-900 ft. (PW—Jul.31'59,p66). Later, the company plans to produce from the F2 (Devonian), between 3,937-4,265 ft., and perhaps also from D reservoirs, near the top of the Carboniferous.

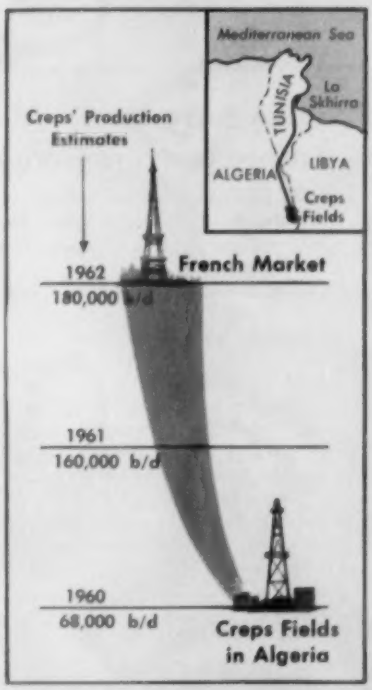
Creps' first field in the area, Edjele, has "certain" recoverable reserves of 245-million bbl., according to the company's estimate.

Edjele, a 23-sq. mi. field, had 109 producers (out of 115 holes drilled) at the beginning of September.

Average production per well is from 280 b/d to 350 b/d, according to Creps.The field's best well can produce 500 b/d, while the least productive will flow around 70 b/d.

Creps is putting four pay zones—the D2 and D4 of the Carboniferous and the F2 and F4 Devonian—into production this year. D2 oil is found at around 1,400 ft., D4 at 1,640 ft., F2 at 2,300-450 ft., and F4 at 2,560-690 ft.

Creps also has two other fields in the same general area, El Adeb Larache and Tiguentourine, which won't go into production until 1962.



CREPS' PRODUCTION SCHEDULE is detailed in the diagram above. Starting at 68,000 b/d, the company plans to boost production to 180,000 b/d in 1962.

What's New / AROUND THE WORLD

Argentine Bidding Put Off by Army

ARGENTINA—The Oct. 7 deadline private companies were given for bidding on new oil rights was put off "indefinitely" last week—apparently due to army criticism of management of YPF, the state oil agency.

The postponement followed charges from the army representative on YPF's board that foreign companies were being favored. In particular, he expressed views that they should be excluded from bidding for the South Flank of the Comodoro Rivadavia basin. This semiproved area was included in the original tender call.

•

VENEZUELA—Venezuela's oil labor unions, like its Oil Ministry, hope to coordinate with the Middle East.

A conference in Caracas of Venezuelan and Middle Eastern oil worker union leaders is being planned by Fedepetrol, the Venezuelan Oil Workers Federation. Its purpose, Fedepetrol director Carlos Pinerua said last week: To study labor conditions and coordinate union activities of the two oil areas. Labor leaders from Middle East countries that have no oil worker unions also will be invited.

•

URUGUAY—French Sahara crude, payable in francs, was among the oils offered Uruguay last week by nine bidders for a three-year 15,000 b/d contract. Russian crude also was offered for payment in wool and hides. Other offers, for Middle East and Venezuelan crudes, included some with deferred payment terms, and one with a $5-million credit.

•

NIGER REPUBLIC—A French firm has secured the second exploration permit given by this new African republic, south of Algeria and Libya. Petropar has been granted the 26,250-sq. mi. Talak tract for five years.

Earlier this year, it received a 14,500-sq. mi. area—a 10% interest in which was taken up by Prepa, another French company.

•

Middle East oil output in August showed gains of nearly 100,000 b/d in both Iran and Iraq, and a cut well over 100,000 in Kuwait. Saudi Arabia also was down from July. The totals, in 000 b/d:

	Aug. '60	July '60	Aug. '59
Kuwait	1,589.9	1,700.2	1,426.6
S. Arabia	1,159.7	1,198.1	1,096.6
Iran	1,042.0	944.0	883.0
Iraq	979.4	888.2	895.4
Qatar	175.6	175.6	171.5
Neutral Zone	134.7	130.6	113.7
Totals	5,081.3	5,036.7	4,586.8
8-Mo. Avg.	5,040.4	———	4,475.7

•

ALGERIA—Three French companies have been granted four exploration blocks totaling 9,900 sq. mi. in Algeria proper, as distinct from the Algerian Sahara region.

Carep, controlled by the French government, has interests in all four blocks, one alone and the other three with private firms.

The Government General of Algeria holds a 20% interest in Carep.

•

INDIA—This country's oil demand will nearly double in the next six years to "at least" 280,000 b/d of products in 1966, according to the latest industry forecast. This year's product demand will reach an estimated 150,000 b/d, up from 93,400 b/d in 1955, according to the chairman of Burmah-Shell Refineries, Ltd.

•

WEST GERMANY—British Petroleum's German refining capacity will be boosted to 120,000 b/d in two weeks, when its new 80,000 b/d plant goes on stream near Dinslaken. It will be fed by a major crude oil line running to the Rhine-Ruhr from Wilhelmshaven, which was completed last year by Esso, BP, and others. BP also has a 40,000 b/d refinery at Hamburg.

•

FRANCE—Metropolitan France's product demand climbed 11% in 1960's first six months over the same period last year, to more than 11-million metric tons. This total, reported by the Comite Professionel du Petrole, excludes bunker sales, which dropped 4.4% to 811,800 tons.

Cities Service Has Sahara Test Under Way

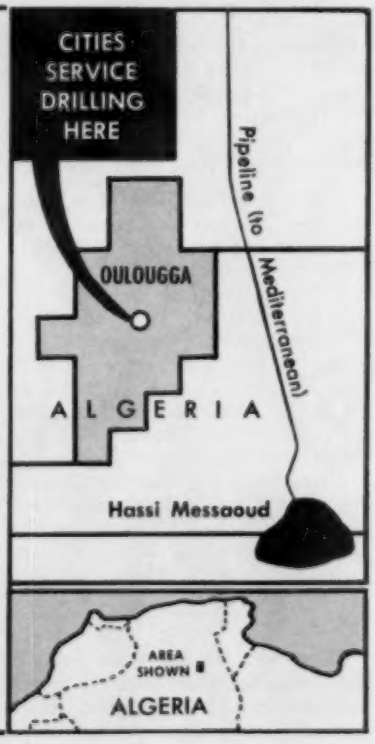
ALGERIA—Cities Service is working on a Sahara wildcat—the first on acreage for which it is the operator.

The company's subsidiary, Afropec, is making the test on the Oulougga tract, some 30 mi. northwest of the prolific Hassi Messaoud field (map).

Afropec holds a 49% interest in the tract. Its French partners Prepa and Francarep hold 33.5% and 17.5% respectively.

Prepa previously drilled an unsuccessful test on acreage held jointly by the companies. And Sinclair is currently drilling a wildcat, under a unit agreement, on a structure that straddles three tracts, one of them held by Cities Service.

Last week, however, drillers on the Cities Service tract were having trouble setting pipe because of caving formations.



Bechtel experience at work to bring

CANADIAN GAS TO CALIFORNIA

Construction has begun on the Alberta-California pipeline which is scheduled to start delivering Canadian natural gas to Northern California during the winter of 1961-62.

The $340-million system is one of the largest pipeline undertakings ever launched—a 1400-mile, 36-inch pipeline system extending from Alberta gas fields through British Columbia, Idaho, Washington, Oregon and California.

The system has been designed to deliver initially 415 million cubic feet of gas to the Pacific Gas and Electric Company system at Antioch, California, and 152 million cubic feet of gas to other interests in the Pacific Northwest.

Three PG&E subsidiaries and affiliates are active in the system's development operation. An independent contract carrier, Alberta Gas Trunk Line Company Limited, will own and operate the main transmission line and the receiving and delivery laterals in Alberta. Westcoast Transmission Company and Montana Power Company are participating in a portion of the system and related projects.

Bechtel has prepared the engineering and economic studies and located the route from California north. Bechtel Corporation and Canadian Bechtel Limited are performing engineering and management of construction from the Alberta fields to the Oregon-California border.

ROUTE LOCATION: Surveyor locates crossing point for pipeline at U. S.-Canadian border.

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NEW Philadelphia Side-Entering Mixers are More Compact, More Powerful...*Yet Cost Less*

Before you buy, be sure you get all the facts on the new Philadelphia side-entering mixer. This compact design has a generous reserve of gear capacity, rugged shafting, and large bearings — all features that minimize maintenance costs. And what about purchase cost? It is less than that of *any mixer* of comparable quality.

Interested? Then check these outstanding advantages.

1. Its compact design minimizes the need for turnbuckle supports or other mixer bracing from the tank wall.

2. You'll get greatly increased gear life because the spiral bevel gear drive has over twice AGMA required capacity for use with maximum standard motor sizes.

3. Your maintenance costs will be less because the one piece reducer and reducer support stand housing is rugged and rigid. Gearing and shafting run truer. Run-out at the shaft seal is minimized.

4. One man can change the mechanical seal or repack the stuffing box quickly and easily when this is occasionally necessary. With all standard units this can be done with a full head of liquid in the tank.

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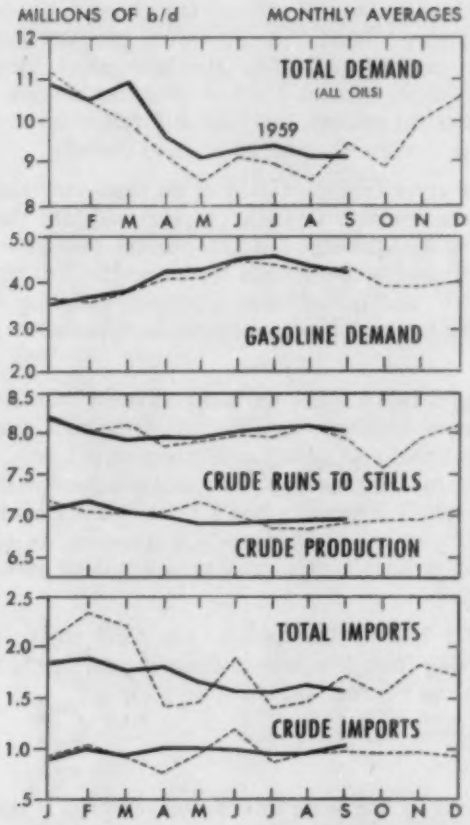
PETROLEUM WEEK'S

Fingertip Figures



Figures for period ended Oct. 7, except as noted

TOTAL DEMAND

Latest 4-week average	*
Year ago	8.388

GASOLINE DEMAND

Latest 4-week average	*
Year ago	3.796

RUNS TO STILLS

Latest week	*
Previous week	7.949
Year ago	7.688

CRUDE PRODUCTION

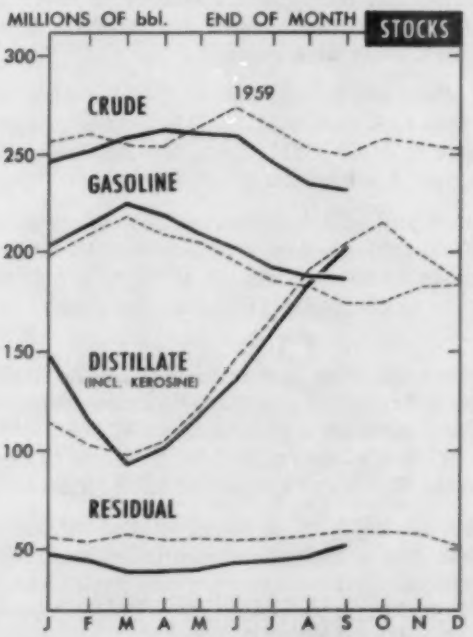
Latest week	*
Previous week	6.849
Year ago	6.812

TOTAL IMPORTS

Latest week	*
Previous week	1.742
Year ago	1.335

CRUDE IMPORTS

Latest week	*
Previous week	1.098
Year ago	.571



CRUDE STOCKS

Week-ended Oct. 1	231.9
Previous week	230.4
Year ago	251.2

GASOLINE

Latest week	*
Previous week	187.4
Year ago	177.6

DISTILLATES

Latest week	*
Previous week	203.8
Year ago	210.5

RESIDUAL

Latest week	*
Previous week	50.3
Year ago	59.0

The continued tight crude supply and the possibility of a refinery strike after Dec. 1 are providing a firm footing for the primary markets, despite a listless demand.

In reality, there is little or no demand in the spot markets at the Gulf, but refiners are looking down the road and holding tight to products.

Normally at this time of the year, refiners would be anxious to shade prices on gasoline to move hold-over material out of storage. But no efforts are being made to push gasoline on to the market.

The nation's crude inventories have turned up slightly in recent weeks, after a long decline.

The increased inventories are the result of some reductions in refinery runs over the past month. And with the present outlook for a continued tight allowable in Texas (page 14), refiners generally are holding back on any present surplus refined product stocks on hand.

The real uncertainty in the refiners' outlook is the labor situation.

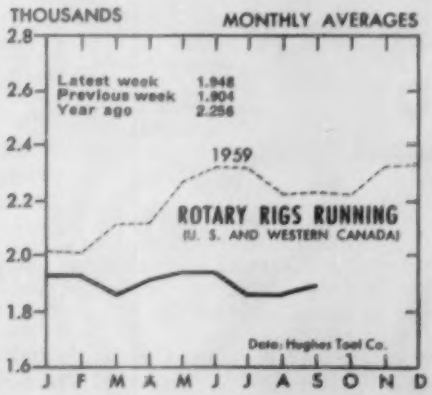
With present refinery contracts with the Oil, Chemical & Atomic Workers Union being allowed to lapse by union plans, the possibility of a major strike could shape up by early December.

So far, no company negotiating with union locals has made any offers to counter OCAW's national Bargaining Policy Committee's demand for an 18¢-an-hour wage increase (PW—Sep.16'60,p15).

Meanwhile, refiners are waiting out the anticipated upturn in demand that should come with cold weather.

* * *

*Due to the Columbus Day holiday, most figures for the week ended Oct. 7 were unavailable at press time.



The Market Trend

Outlook Is Bleak on the Mississippi

The spot charter market for river towing holds bleak promise these days for equipment owners. Only a thumping upsurge in Midwest light and heavy oil demand this month and next can salvage any cheer from an otherwise dismal 1960. Unless upriver buyers start showing interest this month in spot tows to transport product of Gulf or Mid-Mississippi river origin north, rates will lag indefinitely around 0.175¢-0.185¢ per ton-mile. These rates are close to break-even for owners, but they still fail to inspire shipper inquiries. Last year spot towing went at 0.225¢ in October.

There is the possibility that river transportation of oil products "has had it." That's what some observers say. Growth of pipelines into the Midwest has been gnawing at traditional barge business for the past year. One Chicago-area refiner has switched entirely from the river (he had his own tows) to the "Little Big Inch" and Great Lakes pipelines. Others use barging on a steady, term-charter basis, and seldom resort to spot charters any more.

Tow owners' short-range hopes ride hard on an "old-fashioned" winter. A cold winter could tax pipelines' distillate capacity. And inasmuch as residual can't be carried in the lines, cold weather demand might touch off a call for dirty towing. Last month provided some encouragement to the towing people—crude and asphalt shipments had a brisker movement. But with resid supplies so tight at the Gulf, there's a question as to whether supplies will be readily available this winter to would-be river shippers.

But an old-fashioned winter has its bad points, too. Cold weather means ice in the river. And, aside from low water, there's nothing that adds to operators' costs more than plowing through ice gorges.

Sidelights At ANCAP's Bid Opening:

Montevideo last week was the center for some interesting offers in a bid opening that underdrew its scheduled billing of 25 tenders to cover a three-year, 15,000-16,000 b/d crude oil requirement for ANCAP (the Uruguay government oil agency). Only nine showed.

It will be several weeks before offers can be assessed in their relation to one another, but comment is that Gulf's offer of 2,780,000 cubic meters of 31-31.9-gravity Kuwait crude at $1.59 a bbl., f.o.b. the Persian Gulf was "quite sporting." Translation: A low quote.

Another offer that drew attention and still has the trade wondering is that of Shell Uruguay's 2,780,000 cubic meters of 31.7-gravity reconstituted Lagomar at $2.27 a bbl. in 18,000-ton lots, or at $2.20 a bbl. in 31,000-ton lots. Bidders say the price-quality attraction here rests on what "reconstituted" means.

Outstanding, regardless of whether the offer is successful, was the first-time showing in world markets of France's Zarzaitine oil. Transamerican Uruguaya offered 600,000 cubic meters on a c.i.f. basis at $2.569 a bbl. The crude would be loaded at Sekhira (Gabes), Tunisia, terminus of the newly completed pipeline from the Edjele and Zarzaitine fields (page 48).

When first discussed, Zarzaitine crude had a value placed on it about equal to the price of Hassi-Messaoud, less a freight differential of 6¢ to 8¢ a bbl. Also, at first, it was expected that customers would have to buy some of both of these crudes in making a purchase—20% Edjele (about 35.5-gravity) and 80% Zarzaitine (about 40-42-gravity).

The Market Place AROUND THE WORLD

Prices compiled for PETROLEUM WEEK by Platt's OILGRAM Price Service and National Petroleum News, McGraw-Hill Publications

All prices as of October 10

Bold face type indicates changes from previous week

KEY PRICES—REFINED PRODUCTS

(¢ per gal. except dollars per bbl. where $ is shown)

Western Hemisphere

U.S. Gulf Coast, cargoes
- Gasoline, 98 oct prem.....12.25-13.25
- Gasoline, 92 oct reg.....11.25-11.5
- Kerosine.....9-10
- Heating oil, No. 2.....8.25-9
- Gas oil, 48-52, d.i.....8.5-8.875
- Fuel oil, bunker "C".....$2.30

Caribbean, cargoes
- Avgas, Grade 100/130.....14.75
- Gasoline, 93 oct research prem.....11
- Gasoline, 87 oct research reg.....10.125
- Gasoline, 80 oct research.....9.375
- Gasoline, 70-72 oct motor method.....9.25
- Kerosine.....9.25
- Heating oil, No. 2.....8.125
- Gas oil, 48-52 d.i.....8.375
- Fuel oil, bunker "C".....$2.00

New York Harbor, barges
- Kerosine.....10.2-10.45
- Heating oil, No. 2.....9.2-9.45
- Fuel oil, No. 6.....$2.62

Okla.-Group 3, northern shpt., bulk
- Gasoline, 91 oct reg.....12.5-13.25
- Kerosine.....10.5-10.625
- Heating oil, No. 2.....9-9.25
- Fuel oil, No. 6.....$1.80-1.90

Chicago, bulk
- Gasoline, 92 oct reg.....12.625
- Heating oil, No. 2.....9.5-11.35
- Fuel oil, No. 6 high sulfur.....7.65

Los Angeles, rack
- Gasoline, 88 oct reg.....11.3-12.65
- Diesel fuel, PS 200.....7.75-11.25
- Light fuel, PS 300.....$2.90
- Heavy fuel, PS 400.....$2.05-2.45

Natural Gasoline, Grade 26-70
- FOB Group 3.....4.5
- FOB Breckenridge, Tex.....4

LP-Gas
- Propane, Oklahoma (Group 3).....4.5-5
- Propane, Baton Rouge.....5.625

Pennsylvania Lubes
- Bright stock, 25 p.t.....25
- 200 vis. neutral, 25 p.t.....28

Mid-Continent Lubes, Tulsa basis
- Bright stock, solvent, 95 v.i.....26-27
- Neutral, solvent, 200-210 vis.....23-24

Gulf Coast Lubes
- Bright stock, solvent, 95 v.i.....26
- Neutral, solvent, 200 vis.....23

Eastern Hemisphere

Singapore (Pulau Bukom) cargoes
- Avgas, grade 100/130.....15.5
- Gasoline, 79 oct research.....9.125
- Kerosine.....9.625
- Gas oil, 48 d.i. minimum.....8.75

KEY PRICES—CRUDE OIL

(2¢ differential per deg. of grav. applies except as noted)

Western Hemisphere

United States (at the well)
- Mid-Continent, (Okla.-Kan.), 36.0-36.9.....$2.69-2.97
- North Dakota, 36.0-36.9.....2.47-2.87
- Texas:
  - Gulf Coast, low cold test, 26.0-26.9.....3.50
  - Gulf Coast, Upper & Lower, 26.0-26.9.....2.92-3.22
  - West Texas, sweet, 36.0-36.9.....3.00
  - West Texas, N.M., inter., 36.0-36.9.....2.93
  - West Texas, N.M., sour, 32.0-32.9.....2.71
  - East Texas, flat.....3.05-3.25
  - Mirando, 28.0-28.9.....2.96-3.31
- Illinois Basin, flat.....3.00-3.05
- Pennsylvania Grade, Bradford dist., flat.....4.80
- California, Signal Hill, 21.0-21.9.....2.33†
- North Louisiana-Arkansas, 36.0-36.9.....2.72-3.02
- Wyoming, sweet, 36.0-36.9.....2.85-2.90
- Wyoming, sour, 32.0-32.9.....2.63-2.71

Canada (flat prices, at the well)
- Pembina (Alta.).....$2.38
- Leduc-Woodbend (Alta.).....2.53
- Redwater (Alta.).....2.42
- Steelman A (Sask.).....2.44
- Virden (Man.).....2.30

Venezuela (Cargoes, FOB lifting port designated)
- San Joaquin, 41.0-41.9, Puerto la Cruz.....$3.10
- Oficina, 35.0-35.9, Puerto la Cruz.....2.80
- Tia Juana, Medium, 26.0-26.9, Amuay.....2.30
- Bachaquero, flat, La Salina.....1.85
- Lagomar, 31-31.9, Cardon.....2.55
- Lagunillas Heavy, flat, La Salina.....2.07

†Differential per deg. of grav. varies

Eastern Hemisphere

Middle East, Persian Gulf (Cargoes, FOB lifting port)
- Arabia, 34.0-34.9, Ras Tanura.....$1.80
- Safaniya, 27.0-27.9, Ras Tanura.....1.47
- Iran, 34.0-34.9, Bandar Mashur.....1.78
- Iran, 34.0-34.9, Abadan.....1.73
- Iraq, 35.0-35.9, Fao.....1.72
- Kuwait, 31.0-31.9, Mina-al-Ahmadi.....1.59
- Qatar, 41.0-41.9, Umm Said.....1.95
- N. Zone, Burghan, 23.5-24.4, Mina Saud.....1.48
- N. Zone, Ratawi, 23.5-24.4, Mina Saud.....1.41
- N. Zone, Eocene, 16.5-17.4, Mina Saud.....1.28

Middle East, Eastern Mediterranean
- Arabia, 34.0-34.9, Sidon.....$2.17
- Iraq, 36.0-36.9, Tripoli, Banias.....2.21

North Africa, Phillipeville, Algeria
- Hassi Messaoud, 48 and above.....Withdrawn

KEY TANKER RATES

(Last paid, per long ton, single voyage)

U.S. Gulf-New York, clean...(USMC—5%) $2.71†
U.S. Gulf-New York, dirty...(USMC—5%) $2.71†
NWI-USNH, dirty.....(USMC—50%) $1.38†
NWI-UK/Cont., dirty.....(Scale—67%) 10/10*
Per. Gulf-UK/Cont., dirty (Scale—42½%) 34/9*†
Persian Gulf-USNH, dirty.....(USMC—60%) $5.08

**Sterling*

Another Railroad Makes Pipeline Debut

Union Pacific RR., together with Williams Bros., Tulsa, will build a $10-million products pipeline from Colton, Calif., to Las Vegas.

Calnev Pipe Line Co., a newly formed company, will operate the line.

Union Pacific has a majority interest of undisclosed amount in Calnev.

Williams Bros., which will construct the line, has the remaining interest.

The project will mark Union Pacific's entry into the pipeline business. At Colton, the 225-mi. line will connect with the products line of Southern Pacific RR., pioneer among railroads in pipelining.

Southern Pacific's main line, which runs from Los Angeles to El Paso, moves products both ways (PW—Jan.13'56,p30).

Southern Pacific also has a products system reaching from the San Francisco area to Fallon in northwestern Nevada.

Union Pacific's new line, however, will be the first across the desert country of southern California into booming Las Vegas.

The line will be designed for a capacity of 17,000 b/d. Half that amount reportedly has been committed to the line verbally and in writing by refineries in the Los Angeles area.

A source says that Union Pacific has "two letters of intent and verbal committments for 50% of total capacity."

He would not name the prospective shippers, however.

There are 14 refiners in the Los Angeles-Long Beach area.

Of these, he said, "nine or ten are currently tied into the Southern Pacific line."

The line will deliver products to Victorville, Barstow, and Las Vegas (map).

Big customers of the line will be George Air Force Base, at Victorville, and Nellis Air Force Base, at Las Vegas, both of which will take jet fuel.

Jet fuel, diesel oil, and gasoline will be batched through the line in equal proportions.

The diesel and gasoline will be taken off at Barstow and Las Vegas and then trucked to customers.

Diameter of the line from Colton to a point 13 mi. west of Las Vegas will be 8 in.; the remainder will be 6 in.

The line is scheduled to be in operation in March.

Right-of-way acquisition is nearly complete.

Ditching is scheduled to get under way next week and the first pipe is expected to be laid by the week of Nov. 1.

Awards Made for Canada-U.S. Gas Line

All contracts have been awarded for construction of the 1,400-mi. natural gas pipeline from Alberta fields to San Francisco, and work on several phases of the project is under way (PW—Dec.18'59,p48).

U.S. companies will build the 905 mi. of transmission line in this county, while Canadian firms will construct the 458 mi. of main line and 122 mi. of laterals in Canada.

H. C. Price Co. and the joint venture of Western Pipeline, Inc., of Austin, and J. P. Neill & Co., of Dallas, will build the U.S. portion of the line at a total cost of some $200-million.

Price will build the segment from the California-Oregon border to San Francisco, which will be owned and operated by Pacific Gas & Electric Co.

The Bartlesville firm will also construct a 146-mi. piece of the northern portion of the U.S. line, which will be operated by Pacific Gas Transmission Co., PG&E's subsidiary. That piece will run from the British Columbia-Idaho border to Rosalia, Wash.

The remaining 468-mi. portion, from Rosalia to the California line, will be built by Western Pipeline and J. P. Neill.

The 107-mi. section of line from the Alberta border through British Columbia to the U.S. is under contract to Price-Poole of Canada, Ltd., a joint venture of H. C. Price of Canada, Ltd., of Calgary, and Poole Construction Co., Ltd., of Edmonton.

This 36-in. segment will be owned and operated by Alberta Natural Gas Co.

Cost is estimated at $40-million.

Five separate contracts have been awarded for construction of the Alberta portion of the transmission line, plus laterals from gas-producing areas.

Alberta Gas Trunk Line Co., Ltd., which will own this part of the system, estimates construction expenditures will total $90-million.

Dutton-Williams Bros., Ltd., of Calgary, will build the northernmost section of the trunk line, which will consist of 62 mi. of 30-in. line from a point west of Whitecourt to Cynthia. In addition, the contractor will construct a 20-mi. lateral of 22-in. diameter from the Whitecourt area to the trunk line.

Majestic Contractors, Ltd., of Edmonton, will build the next section, which will run 63 mi. from Cynthia to Rocky Mountain House, and will also be 30 in. in diameter. It will also construct a 38-mi., 22-in. lateral from the Rimbey area to the main line.

A 113-mi. section of 36-in. line, from Rocky Mountain House to Priddis, will be built by a joint-venture group, consisting of Mannix Co., Ltd., of Calgary; Piggot Construction, Ltd., of Edmonton; Bannister Con-

What's New / IN TRANSPORTATION

struction Co., Ltd., of Saskatoon; and Marine Pipeline & Dredging, Ltd., of Vancouver.

The final portion of the main line in Alberta, which will consist of 113 mi. of 36-in. line from Priddis to Crowsnest Pass, B.C., will be installed by Majestic Contractors.

In addition, a 64-mi., 16-in. lateral will be built to connect the main line at Crowsnest with a line of Canadian-Montana Pipe Line Co. near Carway, Alta., on the Montana border. It is under contract to Alberta Consolidated Pipe Line Builders.

The contractors are working under an accelerated schedule to complete the line by the winter of 1961-62.

Equipment is being moved on the right-of-way along the entire length of the line so that clearing and preparation on road, railway, and river crossings can be started sometime during the fall.

In the U.S., pipe is now being wrapped as a corrosion preventive at a yard in Oregon and at various points in California.

In Canada, four major river crossings and several smaller ones are expected to be made this fall.

This winter, pipe will be strung along the Canadian right-of-way in readiness for the spring, when installation will begin.

Natural gas sales last year by pipeline companies reporting to the Interstate Commerce Commission totaled 7,766,091,446,000 cu.ft.

Cost of the gas was $1,097,193,513.

The figures were contained in a report prepared by H. Zinder & Associates, Inc., consultants on rate and regulatory problems.

The report lists Phillips Petroleum Co. as the largest supplier of gas, with sales of 642,100,649,000 cu.ft. for a total revenue of $80,152,375.

Pan American Petroleum Co. was second in volume of gas sold.

Biggest purchaser of gas last year was United Gas Pipe Line Co., according to the report, with El Paso Natural Gas Co. second, and Tennessee Gas Transmission Co. third.

•

Opening of a new pipeline system this month will provide the first outlet for gas liquids from the Azalea, Strawn, and Devonian area of northeast Midland County.

The system is being built now by Mesa Pipe Line Co., a newly organized common carrier.

It will include 55 mi. of gathering lines, a pump station and 10,000-bbl. storage tank, and an 8-mi. discharge line to the Midland terminal of Magnolia Pipe Line Co. Cost will be $500,000.

The area has an average daily production of 7,000 bbl.

•

California Co. has disclosed it is the company that is using the new mobile underwater crude-storage unit developed by Bethlehem Steel Co.'s Shipbuilding Division (PW—Aug.26 '60,p36).

The 20,000-bbl. storage facility was submerged in the Gulf at Eugene Island Block 110 field off the Louisiana coast.

The unit consists of a main storage tank, which acts as a base, and four tubular tanks, which support an above-water platform.

To sink it, the tanks were filled with seawater, which will be displaced by the crude to be stored.

•

Cal-Metal Pipe Corp. is now equipped to manufacture pipe in lengths of up to 63.5 ft. at its Baton Rouge plant.

The company says that joints of this length are 30% longer than the sections formerly made.

Big advantage of the longer joints, according to Cal-Metal, is that for each mile of pipeline, 34 fewer welds will be required.

•

Texaco Inc. won top honors for ship-safety last week, with receipt of 15 certificates out of 27 awarded by the American Merchant Marine Institute and National Safety Council's marine section.

Awards were given to vessels which had operated for two years without a lost-time accident.

One of Texaco's 15 tankers, the New Jersey, had operated for 2,174 days—the longest time recorded—with no lost time accidents.

Tidewater Oil Co. won two of the certificates, and Sinclair Refining Co. earned one.

PIPELINES, ahead of other means of transport since 1940 in volume of crude and products carried, held 43.22% of the market last year, a .65% gain over 1958. Shares of other means: water carriers, 28.86%; trucks, 24.82%; railroads, 3.10%.

W. O. Ham, Jr. J. S. Royds

J. S. ROYDS assumes the newly created position of vice-president and exploration manager for Continental Oil Co.'s foreign exploration and production department, in New York, and **W. O. HAM, JR.**, succeeds him as general manager of the domestic exploration department, in Houston. Royds has been general manager of domestic exploration since 1957, and administrative vice-president of Conoco since 1958. Ham was formerly general manager of the company's southwestern region, at Ft. Worth. **Harold R. Prescott** has been promoted to the newly created position of assistant manager of the domestic exploration department. He will continue to be located in Houston, where he was formerly assistant general manager of the foreign exploration and production department.

PAUL W. SHELDON has been appointed to the new position of advertising coordinator for all domestic and international advertising, media research, and advertising planning for Gulf Oil Corp., with offices in Pittsburgh. Sheldon joined Gulf's public relations department at its New York office in 1958. He will also be vice-chairman of a newly formed advertising committee, which includes **Craig Thompson**, director of public relations, chairman of the committee; **R. A. Hunter**, administrative vice-president, marketing; and **B. W. S. Dodge**, director of advertising and sales promotion, domestic marketing. All members of the committee are located in Pittsburgh except Dodge, who will be located in Houston, headquarters for Gulf's domestic marketing department.

P. W. Sheldon A. F. Hamilton

A. F. HAMILTON has moved to Calgary as vice-president and general manager of Texas Gas Exploration Foreign, C.A., subsidiary of Texas Gas Exploration Corp. He will be responsible for extending exploration and production operations into the Canadian area. He was formerly assistant vice-president for Renwar Oil Corp., Dallas.

WILLIAM C. McCAMMON has been named vice-president, supply and transportation, for Standard Oil Co. of California, Western Operations, Inc., with offices in San Francisco. He succeeds **Fred C. Loomis**, who has moved to an executive position with another California Standard subsidiary. McCammon will be responsible for coordination of crude supplies and transportation. McCammon, who joined the California Standard organization in 1932, was most recently assistant to the president of the parent company.

W. C. McCammon E. C. McGraw

E. CLYDE McGRAW, president of Transcontinental Gas Pipe Line Corp., Houston, will be president of the newly created Trans-Southern Pipeline Corp., which will build and operate a common-carrier pipeline to transport LPG in interstate commerce. **Robert L. Topper**, president of Trans-Jeff Chemical Corp., will be executive vice-president of Trans-Southern. Other officers of the new company, who are also Transco officers, are: **John F. Burton**, vice-president; **W. H. Davidson, Jr.**, vice-president and general counsel; **James B. Henderson**, vice-president; **Dan Williamson**, vice-president, land; **A. E. Bryan**, treasurer; and **Tom H. Wheat**, secretary. The new firm and Trans-Jeff are owned by Transco.

D. E. KILLAM, JR., has been appointed manager of the land department for Texas Gas Exploration Corp., with offices in Houston. He will supervise drilling agreements and the acquisition and maintenance of oil and gas leases. Killam joined Texas Gas in 1957 as district landman at Lafayette, La., and before that was in the land department of Sohio Petroleum Co.

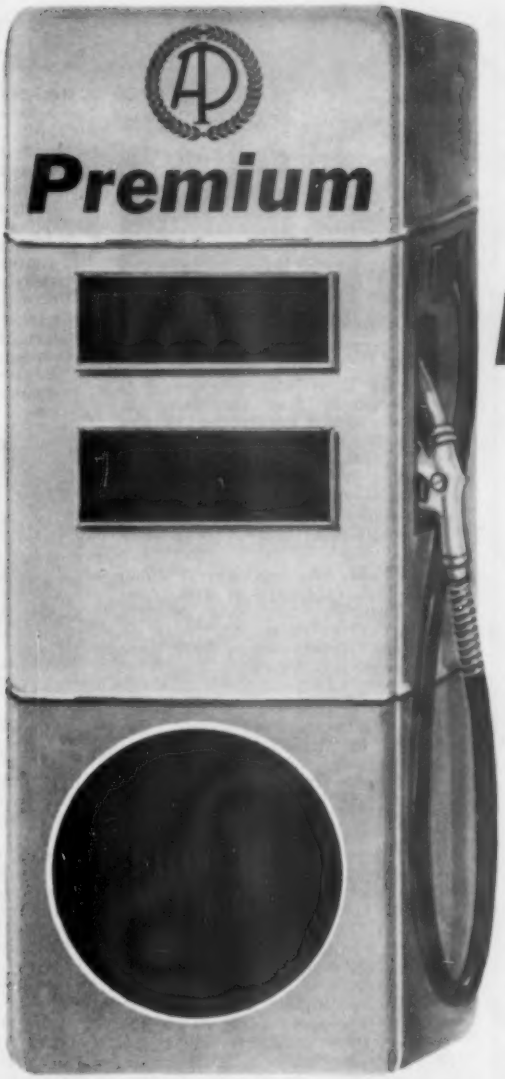
D. E. Killam, Jr. W. E. Mueller

WYMAN E. MUELLER, president of Colorado Interstate Gas Co., Colorado Springs, was elected president of the Independent Natural Gas Assn. of America, at its Miami meeting last week. Mueller is also a director of Colorado Interstate and its subsidiary, Colorado Oil & Gas Corp.

RALPH J. SCHILTHUIS, who recently became vice-president for production of Humble Oil & Refining Co., Houston, received the 1960 John Franklin Carll Award at the Denver meeting of the Society of Petroleum Engineers of AIME. The award carries the citation: In recognition of his important contribution to the technology of petroleum engineering and for his example in applying engineering principles to the problems of industrial management.

OFFICERS FOR 1961 selected at the recent annual meeting of the American Assn. of Oilwell Drilling Contractors in New Orleans include (seated, l. to r.): **C. B. Webster**, Houston, vice-president for the Gulf Coast; **Dale Mount**, Dallas, secretary-treasurer; **Earle C. Hellums**, Houston, national vice-president; **John J. Moran**, Wichita Falls, Tex., president; **Warren L. Baker**, Dallas, executive vice-president; and **Joseph M. Shelton**, Dallas, general counsel. Other new AAODC regional vice-presidents are (standing, l. to r.): **C. H. Todd**, Wichita, Kan., for Central Mid-Continent; **George B. Kitchel**, Houston, for offshore; **Paul F. Rutledge**, Santa Fe, N.M., Rocky Mountains; **M. L. Vance**, Mt. Vernon, Ill., sitting in for **John R. Burns**, Evansville, Ind., vice-president for Illinois, Indiana, Michigan, and Kentucky; **John S. Hagestad**, Bakersfield, for California; **James H. Phillips, Jr.**, Ft. Worth, North and West Central Texas; and **R. C. Tucker**, Midland, Tex., vice-president for New Mexico and West Texas.

SPECIAL A.P.I. ISSUE NOV. 11TH



CLOSING DATE OCT. 21ST

4,000 copies of the November 11th issue of PETROLEUM WEEK will be delivered to oilmen attending the A.P.I. meeting as they arrive in Chicago. This means a big distribution bonus of almost 10% for advertisers in this issue. If the men who attend A.P.I. meetings are the men you want to reach—then here's an opportunity you'll not want to miss.

From coast to coast *Service stations* are getting their faces lifted these days. New designs, new equipment and new conveniences are being installed by oil companies in an effort to increase their share of the market. You can read all about what's being done, and how it is being done, in a Special Report on *MODERNIZATION* in the November 11th issue. PETROLEUM WEEK's editors have prepared a factual report which will be of particular interest to those who must know the cost, timing, and anticipated rewards of converting the old "gas station" to a streamlined automotive service center.

If you sell equipment or services used in marketing petroleum products the November 11th issue of PETROLEUM WEEK offers you a unique opportunity—a circulation bonus of 4,000 and a special report of industry-wide importance and interest.

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A. C. West, Jr.

C. T. Jones

CHARLES T. JONES, vice-president of Oil Center Tool Co., Houston, has been named general manager of the company, and **A. C. (Bus) WEST, JR.,** succeeds him as sales manager. West was formerly western region sales manager. O-C-T is a subsidiary of Food Machinery & Chemical Corp.

E. G. HOLM, JR., president of Tube-Kote, Inc., subsidiary of Tuboscope Co., Houston, has been elected a director of the parent company. He has been associated with Tube-Kote for the past 14 years.

HARRY H. BAUER has been appointed Midwestern regional sales manager for the scientific and process instruments division of Beckman Instruments, Inc., with offices in Chicago. He has been product line manager at Beckman's Fullerton (Calif.) office since 1959. **Herbert Feitler,** formerly process sales engineer in Chicago for the Midwestern region, succeeds Bauer in California. **Herman L. Steudel** succeeds Feitler as process sales engineer in Chicago. Before joining Beckman in July, Steudel was a sales engineer in the controls division of Black, Sivall & Bryson, Inc. **Robert L. Sinek** is the new process sales engineer in the Midwestern region's Cleveland office. He replaces **Richard E. Schmidt,** who has moved to Houston to take over Beckman's major accounts territory in that area. Sinek joined Beckman in March, after serving as a senior process engineer with Standard Oil Co. (Ohio). **Frederick M. Teetzel,** who joined Beckman in June, has been assigned to the Cleveland office as scientific sales engineer. He was with Monsanto Chemical Co. for four years, and with National Lead Co. for eight years, before joining Beckman.

TOMMY L. NICHOLS has been named sales engineer in McEvoy Co.'s Louisiana district, with offices in Lafayette. He was formerly located at the company's headquarters in Houston. In addition to representing the company as salesman, Nichols will provide engineering assistance for customer problems in the use of wellhead equipment, gate valves, and multiple completion equipment. **C. B. Herring** has been appointed sales and service representative for McEvoy in Laurel, Miss. He will be in charge of the company's operations in Mississippi, Alabama, and Georgia. Herring was formerly located at Houma, La.

HARRY K. BRILL has been named general sales manager of A. O. Smith Corp.'s atomic and process equipment division. Brill joined the company as a sales engineer in the Houston office in 1947, and then held a similar position in Tulsa. After that, he returned to Houston as assistant district sales manager, and in 1954 became Houston district sales manager for the atomic and process equipment division, his most recent position. **Andrew L. Lawson** has been named manager of atomic equipment for that division. He was formerly sales manager for atomic equipment.

H. K. Brill

R. W. Kerr

ROBERT W. KERR has resigned as president and director of Fairbanks, Morse & Co. to become president of Fluor Products Co., Los Angeles, a division of Fluor Corp., Ltd. He has also been elected vice-president and a director of the parent company. Kerr will head Fluor Products' diversified operations, including the manufacture of industrial cooling towers, air conditioning towers, and glued-laminated roof structures. He was vice-president and group executive for American Machine & Foundry Co. from 1954 to 1959. After that, he joined Fairbanks Whitney Corp. as vice-president, and was then promoted to president of Fairbanks, Morse, its subsidiary.

WILLIAM G. CLARK is Continental-Emsco Co.'s new store manager at Rangely, Colo., and **ALBERT N. TAYLOR** is the new store manager at Hadacol Corners, Tex. Both men were formerly D+B specialists. **Carrol L. Gillit,** store manager, transfers from Hadacol Corners to Andrews, Tex., succeeding **Eugene M. Peoples,** who moves to Houston as store manager. **Gerald L. Huddleston,** formerly a field salesman, is now D+B specialist at Andrews, and **Issac H. Abercrombie** has been promoted from field salesman to D+B specialist at Laurel, Miss. **G. G. Stegall** moves up from district sales engineer to district D+B specialist at Amarillo, Tex., and **Walter C. Crow** from district production machinery specialist to division sucker rod specialist at Midland, Tex.

GENE P. ROBERS joins the Thermoid division of H. K. Porter Co., in Pittsburgh, as general sales manager. He was formerly vice-president of the Carter Carburetor division of ACF Industries, Inc., in charge of distributor, export, and government sales, and related marketing and ad-

vertising activities. He has also been general sales manager of Weatherhead Co., Cleveland.

R. S. **ALLISON** is the new store manager at Lake Charles, La., for Jones & Laughlin Supply Division, and **R. J. BEVINGTON** is the new store manager at Freer, Tex. Allison was formerly salesman for J&L at Beaumont, Tex., and Bevington was salesman at McAllen, Tex.

T. E. **PARISH** is the new assistant to Hughes Tool Co.'s general manager, at Houston. He will represent the Hughes management on special assignments, and in community and industry relations. Parish was formerly manager of the company's finished product inventory planning and distribution.

T. E. Parish

J. T. Douglas

J. T. **DOUGLAS** moves up to sales manager of Schlumberger Well Surveying Corp.'s Louisiana Gulf Coast division, with offices in Lafayette. Douglas, who joined the company in 1947, was most recently division engineer at Lafayette. **H. H. Ham**, formerly location manager at Laurel, Miss., transfers to Houma, La., as senior sales engineer. **J. D. Cunningham**, formerly location manager at Donaldsonville, La., succeeds Ham at Laurel. **C. B. Dennis** succeeds Cunningham at Donaldsonville. Dennis was formerly sales engineer for the southern Louisiana division.

CHARLES E. VAN VOORHIS, vice-president and account supervisor of Ketchum, MacLeod & Grove, Inc., advertising and public relations agency, transfers from the Pittsburgh office to the New York staff. Service operations of two of his accounts, Gulf Oil Corp.'s petrochemicals department, and Goodrich-Gulf Chemicals, Inc., also move to New York. **Richard Ulrich**, account executive on the two chemical accounts, also moves to New York from Pittsburgh. KM&G is opening a Houston office, where it will continue advertising and related services for Gulf's marketing operation.

GEORGE H. UNZELMAN has been named chief refinery technologist for the Western region of Ethyl Corp., with offices in Los Angeles. Unzelman, who has been with Ethyl since 1955, has served in the refinery technology division of Ethyl's Detroit research laboratories, and as a refinery technologist in Tulsa for the sales department. For the past two years, he has been a technical assistant in Ethyl's advertising and sales promotion department, and has been responsible for the company's technical advertising series.

W. R. Robinson A. J. Rosenberger

ALBERT J. ROSENBERGER moves up to manager of the new valve sales and engineering department of Republic Flow Meters Co., Chicago, subsidiary of Rockwell Mfg. Co., and **WILLIAM R. ROBINSON** is the new valve sales supervisor. Rosenberger was formerly Republic's chief mechanical engineer, and Robinson has been manager of its St. Louis district office. Valve sales and engineering have been brought together under one department to better coordinate technical service to customers.

KARL L. BERRY has joined the sales staff, and **SHELBY J. GRAVES** the engineering department, of Equipment Engineers, Inc., Dallas. Berry, who was formerly with an oil company, will travel throughout the country as a sales representative. Graves, who joined Equipment Engineers earlier this year, is the new chief engineer. He has been a test engineer and a member of the research and development department staff of Otis Engineering Corp.

R. J. **BUNCH** is the new manager of Ingersoll-Rand Co.'s centrifugal pump division, in New York. He has been manager of the condenser department in New York since 1956. **G. T. Jones**, formerly chief engineer in the condenser sales department in New York, succeeds Bunch. At the same time, **T. E. Bennett** was appointed manager of the engineering pump department. He was most recently manager of overseas sales for the centrifugal pump division in New York, where he will continue to be located.

JACK H. ZILLMAN has been elected vice-president, data processing divisions, for Consolidated Electrodynamics Corp., a subsidiary of Bell & Howell Co., in Pasadena, Calif. Zillman, who reports to **Robert H. Garretson**, executive vice-president, will be responsible for operations of Consolidated's Datalab, DataTape, Transducer, and Electro Mechanical Instrument divisions. For the past three years he has been vice-president and general manager for the Pacific division of Daystrom, Inc.

NATIONAL SUPPLY CO. has moved its Illinois district office from Olney, Ill., to Evansville, Ind. **Robert T. Harris** is district manager, and **Charles C. Moats** is assistant district manager. The district includes oilfield supply stores at Clay City, Crossville, Lawrenceville, McLeansboro, Robinson, and Salem, Ill.; Princeton, Ind.; and Henderson, Owensboro, and Summerville, Ky.

SEARCHLIGHT SECTION

(Classified Advertising)

EMPLOYMENT • BUSINESS
EQUIPMENT — USED OR RESALE
OPPORTUNITIES

DISPLAYED RATE
EQUIPMENT & BUSINESS OPPORTUNITY advertising $16.75 per inch.
EMPLOYMENT OPPORTUNITIES — $25.00 per inch, subject to Agency Commission.
UNDISPLAYED RATE
(Not available for equipment advertising)
$1.00 a line, minimum 3 lines.
POSITIONS WANTED undisplayed rate is one-half of above rate, payable in advance.
Box Numbers—Count as one line.
Discount of 10% if full payment is made in advance for 4 consecutive insertions.

FOR SALE

3—International K11 tandem trucks equipped with triplex HP acid pumps, tanks, flexible hose and connections. These pumpers excellent for many lease service operations. Selling price based on salvage value, $5000.00 and up. Terms or lease purchase for qualifying buyers. Write or call C. D. Core, P.O. Box 47, Phone FR 9-5132, Seguin, Texas.

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STATEMENT REQUIRED BY THE ACT OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, JULY 2, 1946 AND JUNE 11, 1960 (74 STAT. 208) SHOWING THE OWNERSHIP, MANAGEMENT, AND CIRCULATION OF

Petroleum Week, published weekly at Chicago, Illinois, for October 1, 1960.

1. The names and addresses of the publisher, editor, managing editor, and business managers are: Published by McGraw-Hill Publishing Company, Inc., 330 West 42nd St., New York 36, N.Y.; Editor, LeRoy Mensing, 330 West 42nd St., New York 36, N.Y.; Managing editor, Richard Machol, 330 West 42nd St., New York 36, N.Y.; Business manager, John Thompson, 330 West 42nd St., New York 36, N.Y.

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3. The known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are: None.

4. Paragraphs 2 and 3 include, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting; also the statements in the two paragraphs show the affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner.

5. The average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the 12 months preceding the date shown above was: 47,021.

McGRAW-HILL PUBLISHING COMPANY, INC.
By John J. Cooke, Secretary

Sworn to and subscribed before me this 15th day of September, 1960.
(Seal) JANET A. HARTWICK
(My commission expires March 30, 1961)

TO **HELP** YOU

Sell Equipment You No Longer Need

USE "Searchlight" Advertising

That Petition Drive Proved A Point

LAST WEEK'S GASOLINE TAX PROTEST campaign apparently stirred up a bit of resentment and misunderstanding among highway department officials and uninformed motorists in some states.

One highway department official even went so far as to challenge publicly: "What good is cheap gasoline without roads to drive on?"

He and the others seemed to feel that the intent of the oil industry's petition campaign was purely selfish—that oil men wanted to curtail the interstate highway construction program by aborting the flow of cash generated by gasoline taxes.

Nothing could be further from the truth. The petroleum industry is and always has been in favor of good road-building programs. It has gone to bat for them repeatedly in many states. It has insisted only that the need for the roads be self-evident, and that the financing program be sound—one that would not penalize motorists wantonly.

It hasn't hesitated to fight construction programs that were grandiose, or far beyond anticipated needs and revenues. And it is strongly opposed to diversion of highway funds to other purposes.

THE INTERSTATE HIGHWAY PROGRAM isn't going to suffer if the latest of the "temporary" taxes on gasoline expires on schedule. As a matter of fact, it will be better off financially—a point that oil men should drive home repeatedly to all motorists.

Congress already has provided that when the temporary 1¢-per-gal. tax goes out of existence June 30, the loss would be made up from some of the $1.7-billion in motorist taxes that are not now being used for highway construction purposes. It has been estimated that this procedure will put $200-million more into the federal road-building kitty than is now going into it via the temporary tax.

THE SOLE OBJECTIVE of the industry's petition campaign in 42 states was to remind Congress of its promise to let the temporary 1¢-per-gal. tax die. In our economy, "temporary" taxes have a horrible habit of hanging on indefinitely. In fact, the first federal tax on gasoline, way back in 1932, was a "temporary" tax of 1¢. Not only is it still with us, but it's up to 4¢ now. Through the years, federal, state, and local gasoline taxes have risen tremendously—380% since 1925. They are equivalent to a 50% tax on the retail price of gasoline now.

The highway department official who raised the challenge about cheap gasoline and good roads had a point. But the state official who answered him had a better one: "What good are roads if the motorist finds them too expensive to enjoy?"

The petition campaign served a useful purpose. The state petroleum associations are to be commended for their efforts.

Everybody Wins!

The importance of over-all *safety* is rewarded at Halliburton each year by the presentation of this beautiful trophy to its winning division. Other individual and group awards keep *safety* in the minds of every Halliburton employee all year long. We believe that in practicing safety — everybody wins . . . our fellow workers, our customers, and fellow citizens. That's why we always held to our slogan:

"We'll get there somehow . . . . safely!"

Halliburton COMPANY

DUNCAN, OKLAHOMA

WHAT CAN BE NEW IN ACIDIZING AFTER 28 YEARS?

Answer: practically everything. Since 1932 when Dowell introduced inhibited acidizing, continuous improvements have been made in this method of well stimulation. For example, acidizing was originally used to improve the producing characteristics of only highly soluble formations like limestone or dolomite. This is no longer a limitation. Conglomerates, chats and even some sandstones are frequently helped with Dowell acidizing. From the simple method of "dumping" inhibited hydrochloric acid, Dowell has developed a host of effective new techniques, special acids and special chemicals. Just recently, Dowell introduced an even more precise method for *engineering* acid treatments called the "Acid Guide"*. Today you, as an operator, have the added assurance that this old service is younger than ever . . . more effective . . . streamlined to meet your needs and help you get more oil. What's new in acidizing? Plenty, and you can count on Dowell to continue developing even better methods. Get more for your money. *Dial Dowell.* Dowell, Tulsa 1, Oklahoma.

*DOWELL SERVICE MARK

Services for the oil industry

DOWELL

DIVISION OF THE DOW CHEMICAL COMPANY